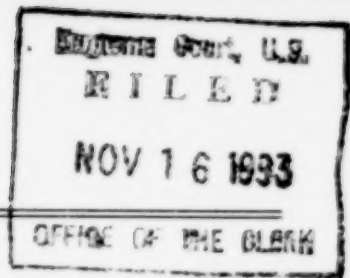


No. 92-1911



In The
Supreme Court of the United States
October Term, 1993

PUD NO. 1 OF JEFFERSON COUNTY
AND THE CITY OF TACOMA,

Petitioners,

v.

STATE OF WASHINGTON, DEPARTMENT OF
ECOLOGY, DEPARTMENT OF FISHERIES AND
DEPARTMENT OF WILDLIFE,

Respondents.

On Writ Of Certiorari To The
Supreme Court Of The State Of Washington

JOINT APPENDIX

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Petition For Certiorari Filed June 1, 1993
Certiorari Granted October 4, 1993

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RELEVANT DOCKET ENTRIES

POLLUTION CONTROL HEARINGS BOARD

January 28, 1987 - Cross Motion for Summary Judgment filed with the Pollution Control Hearing Board

January 28, 1987 - Affidavit of Ken Bruya

January 28, 1987 - Affidavit of Brad Caldwell

January 28, 1987 - Affidavit of Hal Beecher

June 29, 1987 - Pre-Hearing Order of Pollution Control Hearing Board

February 4, 1988 - Appellant's Motion to Supplement the Record as to Economic Feasibility Information, with Affidavit of Garth Jackson

THURSTON COUNTY SUPERIOR COURT

February 24, 1989 - Petition for Review of the Decision of the Pollution Control Hearings Board

March 1, 1989 - Cross Petition for Review of Pollution Control Hearing Board

January 3, 1990 - Motion to Establish Briefing Schedule and Date for Argument

February 27, 1990 - Notice of Hearing

November 30, 1990 - Memo in Support of City and PUDS Cross-Appeal on the Jurisdictional Issue

November 30, 1990 - Trial Brief of the Department of Ecology, Fisheries and Wildlife

December 17, 1990 - Response Brief of Department of Ecology, Fisheries and Wildlife

December 20, 1990 - City & PUD's Reply Brief on the Jurisdictional Preemption Issue

March 2, 1991 - Motion for Expedited Hearing Date

May 10, 1991 - Memo Opinion of Judge Fuller

June 6, 1991 - Notice of Appeal to Supreme Court

June 14, 1991 - Copy of Letter from Supreme Court to Counsel

June 14, 1991 - Notice of Supreme Court No. 58272

June 26, 1991 - Designation of Clerk's Papers & Exhibits

July 25, 1991 - Notice of Hearing - Special Setting

July 29, 1991 - Memo of PUD and City in Support of Their Proposed Findings of Fact, Conclusions of Law & Final Judgment

August 14, 1991 - Findings of Fact & Conclusions of Law and Final Judgment

April 2, 1992 - Letter from Supreme Court Clerk

SUPREME COURT OF THE STATE OF WASHINGTON

June 12, 1991 - Notice of Appeal

June 26, 1991 - Statement of Grounds for Direct Review

July 19, 1991 - Clerk's Papers - 2 Volumes Received From Thurston County

August 26, 1991 - Letter establishing Briefing Schedule

August 26, 1991 - Designation of Clerk's Papers - Supplemental of Clerks

September 12, 1991 - Answer of Respondents to Statement of Grounds for Direct Review

September 12, 1991 - Clerk's Papers - 1 Volume pages 284-332 received from Thurston County Clerk

October 14, 1991 - Proposed Report of Proceedings - Notification That 1 Vol. of transcript was filed in Thurston County Clerk's Office

November 25, 1991 - Notation Order on Motions Establishing Briefing Schedule

January 27, 1992 - Appellant's Brief

February 27, 1992 - Respondent's Brief

March 13, 1992 - 1 Box and 3 Charts of Administrative Record Received from Thurston County

April 28, 1992 - Motion for Amicus Brief

April 30, 1992 - Appellant's Reply Brief

May 1, 1992 - Court Ruling on Motions - (Letter Form) Granting Motion to File Amicus Brief

May 18, 1992 - Motion to File Amicus Curiae Brief on Behalf of 14 State, Regional and National Conservation Groups

May 18, 1992 - Amicus Curiae Brief

May 18, 1992 - Amicus Curiae Brief of Behalf of Conversation Amici

May 18, 1992 - Order on Motions

June 8, 1992 - Answer of Utilities Amicus Curiae Brief

June 9, 1992 - Notation Order on Motions

June 9, 1992 - Affidavit of Mailing Answer to Amicus Curiae Brief

June 25, 1992 - Set for Hearing - entered June 25, 1992 En Banc 3rd Case

March 15, 1993 - Additional Authorities

April 1, 1993 - Opinion

May 3, 1993 - Mandate

May 5, 1993 - Administrative Record - returned to Thurston County

June 8, 1993 - Supplemental Pleadings - Notice of Filing Petition for Cert.

BEFORE THE POLLUTION CONTROL
HEARINGS BOARD
STATE OF WASHINGTON

PUD NO. 1 OF JEFFERSON)	
COUNTY, and CITY OF)	
TACOMA DEPARTMENT OF	)	PCHB No. 86-118
PUBLIC UTILITIES,)	
Appellant,	)	AFFIDAVIT OF
	)	KENNETH J.
v.	)	BRUYA
STATE OF WASHINGTON,)	
DEPARTMENT OF ECOLOGY,)	
Respondent.)	
_____)	

STATE OF WASHINGTON)
) ss.
COUNTY OF THURSTON)

I, Kenneth J. Bruya, being first duly sworn upon oath, depose and say:

1. I am over 18 years of age and competent to testify herein.

2. I am employed by the Washington State Department of Fisheries as a Fisheries Biologist. Previously, I was employed by the Fisheries Research Institute, University of Washington, as a Fisheries Biologist. I received a Bachelor of Science Degree from the University of Washington in Fisheries Biology in 1973. I received a Masters of Science in Fisheries Biology from the University of Washington in 1981.

3. I worked with Brad Caldwell and other agency representatives on the minimum instream flow for the bypass reach of the Elkhorn hydroelectric project. The project is proposed to be located on the Dosewallips River.

4. I am well acquainted with the IFIM methodology for determining an appropriate minimum instream flow for a given stream.

5. The minimum instream flow that was imposed by the Department of Ecology for the Elkhorn project in a water quality certification dated June 11, 1986, is reasonable and appropriate. These flows are established to maintain habitat for anadromous fish. These flows are necessary to protect salmon runs in the Dosewallips River. The bypass reach is utilized by several species of salmon for spawning, incubation, and juvenile rearing.

6. The Department of Fisheries supports the flow that was imposed by the Department of Ecology for the Elkhorn project.

/s/ Kenneth J. Bruya
KENNETH J. BRUYA

SUBSCRIBED AND SWORN TO before me this 28th day of January, 1987.

/s/ Beverly J. Jolley
NOTARY PUBLIC in and for
the State of Washington.
My commission expires.
12/21/89.

BEFORE THE POLLUTION CONTROL
HEARINGS BOARD

STATE OF WASHINGTON

PUD NO. 1 OF JEFFERSON)	
COUNTY, and CITY OF)	
TACOMA DEPARTMENT OF	)	PCHB No. 86-118
PUBLIC UTILITIES,	)	AFFIDAVIT OF
Appellant,	)	BRAD
	)	CALDWELL
v.)	
STATE OF WASHINGTON,)	
DEPARTMENT OF ECOLOGY,)	
Respondent.)	
_____)	

STATE OF WASHINGTON)
) ss.
COUNTY OF THURSTON)

I, BRAD CALDWELL, being first duly sworn upon oath, depose and say:

1. I am over 18 years of age and am competent to testify herein. All of the following testimony is from my own personal knowledge.

2. I am employed by the Department of Ecology as a Fish Biologist. I work in the Department's Water Resources Program. My specialty is the setting of appropriate minimum instream flows utilizing the standard "Instream Flow Incremental Method" (IFIM). I work closely with other resource agencies in arriving at a suggested minimum instream flow.

3. I attended college at Florida Southern College, where I received a Bachelor of Science degree in Biology. I received my Masters Degree from Colorado State University in Fisheries Biology.

4. After I received my Masters Degree, I worked for the "Instream Flow Group" for one and one-half years. This group originated the IFIM and is nationally recognized for its expertise in the IFIM process. I taught courses for the Instream Flow group in field technique and computer analysis. I have also worked as a private consultant and for the Washington State Department of Fisheries as an instream flow specialist.

5. I worked extensively on the minimum instream flow for the bypass reach of the proposed Elkhorn project, utilizing the IFIM methodology. The project itself would consist of a diversion weir, or a small dam, to be located at river mile 13.8, just outside the Olympic National Park. The weir would divert up to 600 cubic feet per second of river water from the natural channel to a penstock, or large pipe. The diverted water would run downstream at a relatively constant elevation, while the river drops steeply below. Then, approximately 1.2 miles downstream, the penstock would drop almost vertically to the powerhouse. The falling water would turn a turbine in the powerhouse generating electrical energy. The river water would then be returned to the channel. The bypass reach is the stretch of river between the diversion weir and the powerhouse. It was this stretch of river upon which I concentrated in setting the minimum instream flow in question.

6. The Dosewallips River is a free flowing, beautiful stream which drains a large portion of the eastern Olympic mountain range. The west fork drains the glaciers and snowfields of Mt. Anderson. The main fork drains the slopes of Mt. Hayden and Mt. Fromme. The upper portion of the river runs entirely through the Olympic National Park. The proposed Elkhorn project would be located just outside the park boundary.

7. The Dosewallips is the second largest stream flowing into Hood Canal. It is a very important stream for salmon and steelhead. The Dosewallips supports some of the largest runs of salmon and steelhead in the entire canal. Both winter and summer steelhead utilize the Dosewallips. Chinook, Coho, and Chum salmon are also found in the river. The Dosewallips supports the largest run of Pink Salmon of any stream flowing into the Canal.

8. The bypass reach may be utilized by all of these types of salmon and steelhead. It is utilized as a spawning area and as a rearing area for juveniles. For this reason, a minimum instream flow is absolutely necessary for the bypass reach. In the absence of a minimum flow, the Elkhorn project could dewater the pypass reach for much of the year, rendering it unfit for fish. It is impossible to quantify what impact this would have on the steelhead and salmon runs in the Dosewallips, but a detrimental impact, due to loss of habitat, would almost certainly occur.

9. A water quality certification was issued for the Elkhorn project on June 11, 1986. A copy is attached as

Exhibit 1 hereto. A condition was included in the certification which required the maintenance of a minimum instream flow in the bypass reach for the project. The minimum flow required is the one arrived at by me and other agency representatives using the IFIM methodology.

10. In arriving at this flow, I worked closely with representatives of the Department of Fisheries, Department of Game, U.S. Fish and Wildlife Service, and the Point No Point Treaty Council. These agency representatives are all trained in the IFIM process and are very experienced in utilizing this method. The instream flow in question was agreed to by the agencies listed above as appropriate and necessary.

11. The instream flow that was imposed as a condition in the water quality certification is a very modest one. It is, at least, a ninety (90) percent exceedance flow. In other words, the natural flow in the stream will exceed the minimum flow 90 percent of the time. During some months of the year, the minimum flow will be a 98 percent exceedance flow. Therefore, in my opinion, the minimum flow requirement is a reasonable, in fact, minimal device which will protect the Dosewallips and its fish runs and which will allow the City to construct and operate the Elkhorn Project.

/s/ Brad Caldwell
BRAD CALDWELL

SUBSCRIBED AND SWORN TO before me this 28
day of January, 1987.

/s/ Patricia J. Korosec
NOTARY PUBLIC in and for
the State of Washington.
My commission
expires 1-16-90

BEFORE THE POLLUTION CONTROL HEARINGS
BOARD STATE OF WASHINGTON

PUD NO. 1 OF)	
JEFFERSON COUNTY,)	
and CITY OF TACOMA	)	PCHB No. 86-118
DEPARTMENT OF)	
PUBLIC UTILITIES,	)	AFFIDAVIT OF
	)	HAL BEECHER
Appellant,)	
v.)	
STATE OF)	
WASHINGTON,)	
DEPARTMENT OF)	
ECOLOGY,)	
Respondent.)	
<hr/>		
STATE OF WASHINGTON)	
	)	ss.
COUNTY OF THURSTON)	

I, HAL BEECHER, being first duly sworn upon oath,
depose and say:

1. I am over 18 years of age and competent to testify herein.

2. I am employed by the Washington State Department of Game. I am an instream flow biologist with the Habitat Management Division of the Department of Game. I have been employed by the Department of Game since 1979.

3. I received a Bachelor of Arts Degree in Biology from Middleberry College in 1970. I received a Masters of Science in Marine biology from the University of West Florida in 1973. I received a Ph.D. in Stream Ecology and Ichthyology from Florida State University in 1979. I am very experienced with various instream flow methodologies. I am familiar with the IFIM methodology.

4. I am familiar with the proposed Elkhorn hydroelectric project to be constructed on the Dosewallips River. I worked closely with Brad Caldwell, Jean Caldwell, and representatives of other resource agencies in developing a suggested instream flow for the bypass reach of the Elkhorn project. That flow was imposed as a condition in a water quality certification issued by the Department of Ecology for the Elkhorn project on June 11, 1986.

5. The suggested flow is absolutely necessary for the maintenance of winter and summer steelhead runs in the Dosewallips River. The purpose of the flow is to maintain habitat for anadromous fish runs, and possible for resident game fish. The Washington State Department of Game supports the minimum instream flow that was required by the Department of Ecology in the water quality certification previously mentioned. The flow is reasonable and, in my opinion, necessary to the maintenance of anadromous fish runs in the Dosewallips River.

/s/ Hal Beecher
HAL BEECHER

SUBSCRIBED AND SWORN TO before me this 28th
day of January, 1987.

/s/ Beverly J. Jolley
NOTARY PUBLIC in and for
the State of Washington.
My commission expires.
12/21/89

BEFORE THE
POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

IN THE MATTER OF A)
SECTION 401 WATER)
CERTIFICATION)
GRANTED BY)
DEPARTMENT OF)
ECOLOGY TO)
PUD NO. 1 OF)
JEFFERSON COUNTY)
AND CITY OF TACOMA,)
DEPARTMENT OF)
PUBLIC UTILITIES,)
Appellant,)
v.)
STATE OF)
WASHINGTON,)
DEPARTMENT OF)
ECOLOGY,)
Respondent.)

PCHB No. 86-118
PRE-HEARING ORDER

A pre-hearing conference was held before William A. Harrison, Administrative Appeals Judge for the Pollution Control Hearings Board on June 25, 1987, in Lacey, Washington.

Appellant was represented by Mark L. Bubenik, Assistant City Attorney. Respondent was represented by Jay J. Manning, Assistant Attorney General.

The following issues were set forth:

I

ISSUES

1. Whether the specific base flows imposed by the Department of Ecology in this instance are appropriate for the preservation of the fishery resource and related values?

2. What quantity and type of fish inhabit the waters to be affected by the base flows described by the Department of Ecology?

II

WITNESSES

Appellant's Witnesses:

1. Dwayne Simons - City Engineer
2. Phil Hilgert - Hosey and Associates, Biologist
3. Dr. Eugene Welch - University of Washington Professor
4. Al Solonsky - Hosey and Associates
5. Eileen Garland - Hosey and Associates, Environmental
6. Paul Svoboda - City Biologist
7. Ken Bovee - U.S. Fish and Wildlife Service

Respondent's Witnesses:

1. Brad Caldwell - DOE
2. Hal Beecher - DOG
3. Elaine Rybak - USFS
4. Ken Bruya - DOE

5. Steve Ralph - Point No Point Treaty Council
6. Walt Bergstrom - DOE

III

EXHIBITS

1. License Application to the Federal Energy Regulatory Commission dated March 17, 1986.

2. Instream Flow Study by Hosey and Associates.

3. Washington Department of Fisheries Fish Siting Records for By-pass Reach.

4. Methodology for Determining Puget Sound Coho Escapement Goals, Escapement Estimates, 1977 Pre-season Run Size Prediction and In-season Run Assessment, WDF Technical Report No. 28, April 1977.

5. Aquatic Habitat and Vegetation Survey of the Dosewallips River Floodplain, Shapiro and Associates, October 1982.

6. MEeting Record from interagency meeting held on September 7, 1983 (IFIM study scoping).

7. Record of interagency site visit conducted on September 8-9, 1983 (IFIM study scoping).

8. Record of interagency site visit conducted on September 20-21, 1983 (IFIM study scoping).

9. Letter from Jay Laughlin, Hosey and Associates to agencies dated January 12, 1984 (requesting letters of support for preliminary permit extension - includes summary of instream flow work to date).

10. Record from interagency meeting held on February 21, 1985 (review of IFIM field data and discussion of hydraulic modeling approach).

11. Letter from John Leder and Phil Hilgert to agencies dated March 7, 1985 (comments on hydraulic model).

~~12. Record from interagency meeting held on May 30, 1985.~~

13. Letter from Ken Bovee of the Instream Flow Group.

14. Letter from Phil Hilgert to Doug Ruston, Washington Department of Ecology dated August 1, 1985 (comments on IRPP).

15. Record from interagency meeting held on January 14, 1986 (discussed applicants revised flow proposal).

16. Letter from Steve Ralph, Point No Point Treaty Council to Phil Hilgert, Hosey and Associates dated March 23, 1986 (rejecting applicants proposed flow regime and submitting the agency proposal).

17. Letter from Dave Stout, U.S. Fish and Wildlife Service to Phil Hilgert, Hosey and Associates dated March 28, 1986 (rejecting applicants proposed flow regime and submitting the agency proposal).

18. Letter from Mark Grandstaff and Hal Beecher, Washington Department of Game to Phil Hilgert, Hosey and Associates dated February 5, 1986 (rejecting applicants proposed flow regime and submitting the agency proposal).

19. Instream Resources and Water Allocation Program review dated February 1987.

Respondent's Exhibits:

Respondent did not identify exhibits at this conference.

The parties shall file and exchange their lists of witnesses and exhibits on or before November 1, 1987.

IV BRIEFS

The parties are not required to file briefs in this matter. If parties elect to do so, however, all briefs shall be filed one week before hearing, which deadline is now December 8, 1987.

V EFFECT OF THIS ORDER

The above statement of issues (Part I) shall control the subsequent course of the proceedings unless modified for good cause by subsequent order of this Board. WAC 371-08-140. The above statement of witnesses (Part II and III), when filed shall control the subsequent course of the proceedings unless changed by notice adequate to prevent prejudice to both parties.

VI SITE VISIT

The Department of Ecology has requested the Board to visit the site provided that weather conditions allow at the time of hearing. In the event that weather conditions do not allow the parties will explore the possibility of

cooperatively producing a video tape showing those places and things that will be referred to in testimony.

DATED this 29th day of June, 1987.

POLLUTION CONTROL
HEARINGS BOARD

/s/ William A. Harrison
WILLIAM A. HARRISON
Administrative Appeals Judge

BEFORE THE POLLUTION
CONTROL HEARINGS BOARD
STATE OF WASHINGTON

CITY OF TACOMA, et al.,)	
Appellants,)	
vs.	)	PCHB No. 86-118
STATE OF WASHINGTON)	
DEPARTMENT OF)	
ECOLOGY, et al.,)	
Respondents.)	

TRANSCRIPT OF PROCEEDINGS

DAY ONE

December 15, 1987

Lacey, Washington

Lisa Alger
Registered Professional Reporter
GENE BARKER & ASSOCIATES
406 Security Building
Olympia, Washington 98501
(206) 943-2693

* * *

[28] Q Mr. Hilgert, could you briefly describe the hydroelectric development process?

A What we are really looking at is when someone decides they want to build a hydropower project they

apply for a license application from the Federal Energy Regulatory Commission, Federal Government. The Government gives them a permit to study a particular site, lock in rights to that site for a period of three years. During that preliminary permit phase you need to develop the information in order to try and assess impacts. This is the period where you really start working closely with the various Fish and Wildlife Service Agencies, tribes and develop the environmental studies. You then prepare a draft license application that identifies the resource, your proposed project, any alternatives, alternative configurations for your project and what you perceive to be the impacts associated with the development.

A draft of the application goes out to the agencies, they have a period of time to look at the draft, and then they send their comments back to you and you revise the draft or respond to their comments and send a revised license application and the agencies' comments and any comments you have, send the whole thing [29] off to the FERC, the Federal Energy Regulatory Commission, they look at it and they generally try and get an application where agreements are all worked out. They like to see things all finalized mitigation plans, if necessary. Their responsibility is to arbitrate in case you have a disagreement between the applicant and the agencies.

Frankly, they don't like to try to get into that. They find they have problems trying to arbitrate because then you have both sides fighting against you. They will generally send the application back and say why don't you guys work it out for a little bit longer. They will often request additional information as an incentive to try and get the applicant and the agencies to work things out. If

all else fails, they either accept or reject the license application and they make an independent assessment of what they think the project should go through, and any mitigation they feel is necessary.

It's a process that a preliminary permit takes three years. The license, once it goes in, can take from anywhere to two to five years, depending how long it sits back and defers, and the license is issued and you have four years to start construction.

Q I'm showing you what's marked as Exhibit A-4. Would you [30] please identify this document?

A This is the application for the Elkhorn hydroelectric project submitted to the FERC in March of '86. It contains the application, agency comments, our response to those comments, notice of deficiencies. If you send an application often times when you start the process and when you finally send the thing in, sometimes FERC rules will change or you'll forget a certain portion that they may be looking at, and they will send you a deficiency letter and say well, you didn't tell us how much this is per item cost.

* * *

BEFORE THE POLLUTION
CONTROL HEARINGS BOARD
STATE OF WASHINGTON

PUD NO. 1 OF JEFFERSON)	
COUNTY and CITY OF TACOMA,)	
DEPARTMENT OF PUBLIC)	
UTILITIES,)	
Appellants,)	
vs.	)	PCHB NO. 86-118
DEPARTMENT OF ECOLOGY,)	
DEPARTMENT OF WILDLIFE, and)	
DEPARTMENT OF FISHERIES,)	
Respondents.)	

TRANSCRIPT OF PROCEEDINGS

DAY TWO

December 16, 1987

Lacey, Washington

Bibiana D. Carter
Registered Professional Reporter
GENE BARKER & ASSOCIATES
406 Security Building
Olympia, Washington 98501
(206) 943-2693

* * *

[149] Q. Mr. Beecher, could you state your full name and spell it for the record?

A. My name is Hal A. Beecher, H-a-l B-e-e-c-h-e-r.

Q. Mr. Beecher, by whom are you employed?

A. I am employed by the Washington Department of Wildlife.

Q. And how long have you have been with the Department of [150] Wildlife?

A. I have been with the Department of Wildlife, formerly the Department of Game, since the fall of 1979, approximately eight years.

Q. What's your current position?

A. My current position is technical services program manager.

Q. Could you tell us what your usual job duties are?

A. One of my job duties is instream flow biologist and instream flow expert for the department. I also am in charge of - I supervise people that work with habitat evaluation procedures, mitigation banking, wetlands, Puget Sound Water Quality Authority and - well, a few other related things.

Q. In the packet of exhibits in front of you, is your resume included as Exhibit R-7?

A. Yes it is.

Q. Using that exhibit as you need to, would you please briefly describe your educational background and employment history?

A. I have a bachelor's, master's and PhD in biology and I have worked for the Department of Wildlife for about eight years working primarily on instream flows. I have also worked for The Nature Conservancy as an aquatic ecologist and as a consultant in stream ecology and bird ecology.

Q. Have you had any specific training with regard to the [151] instream flow incremental method?

A. Yes, I have. I have taken several of the short courses that the Instream Flow Group has provided, both here in Washington and also in Fort Collins, Colorado.

Q. Have you actually performed IFIM studies?

A. Yes, I have. I performed one IFIM study, really the entire study, taking a lead on it myself and doing all the fieldwork and computer work, and everything, on Snow Creek which is on the Olympic Peninsula. I have been involved in many other studies.

Q. Have you reviewed other IFIM studies that have been -

A. Yes. I have reviewed virtually all the IFIM studies that have been conducted for small hydroelectric projects, for other types of projects in the state of Washington, since probably '79.

Q. How did you first get involved with the Elkhorn project?

A. I was first involved with the Elkhorn project when in 1982, early '82, when my job duties were to be the - I was responsible for being the Department of Wildlife - or Department of Game then - representative for mitigation for hydroelectric projects on the Olympic Peninsula and also parts of the Western Cascades.

Q. Would you please run through your involvement with the project generally?

A. Yes. As I mentioned, my involvement began in early 1982 [152] when I requested that the Attorney General's Office intervene on behalf of the Department of Game in this hydro project. In the end of 1982 I visited the site with the project proponent and its consultant. Let's see. In early 1983, March, I had some correspondence with the consultant regarding steelhead usage of the bypass in which I had obtained information that steelhead did in fact use the bypass reach.

Q. Let me ask you about that specifically. In your opinion, do steelhead use the bypass reach?

A. Yes, they do.

Q. Would you tell us how you know that?

A. I have observed juvenile steelhead in the bypass. I have been told by the proponent's consultant that they have been observed, adult steelhead, in the bypass. I have talked to the Olympic National Forest, some Olympic National Forest personnel, and also Parks personnel also regarding their evidence that steelhead are in the Dos-wallips immediately upstream from the bypass and, therefore, must have gone through the bypass reach to get there.

Q. Rather than go through all of the meetings that you went to, is it fair to say that you attended the majority of the meetings that were held regarding the Elkhorn project?

A. Yes, it is.

[153] Q. Have you ever been to the site?

A. Yes, I have.

Q. Have you ever snorkeled the stream?

A. Yes, I have.

Q. Would you tell us what that means and what is involved in snorkeling?

A. We got in wet suits, masks, snorkels, and vigorously climbed, scrambled from the vicinity of the proposed intake down to Elkhorn Campground, and during that time, when we had time, I stopped and looked for fish and looked at habitat. And one of the purposes of this trip was to get an idea of the overall conditions, habitat conditions in the bypass, relative abundance of different habitat types such as pools, riffles, cascades, waterfalls, boulders, so to select the site where the IFIM study could be conducted.

Q. I would like you to attempt if you can to characterize the bypass reach as habitat for steelhead. Is it poor, medium, good? Could you characterize it in that nature?

A. It appears to me to be - to have a lot of good rearing habitat. Its pools, a lot of plunge pools and boulder chutes.

Q. What is a plunge pool?

A. A plunge pool is a pool at the base of a waterfall which can be a small waterfall of only a foot or two or a large [154] waterfall. And in my experience with a variety of streams around the state of Washington, I would say that this is relatively good steelhead, particularly good steelhead-rearing habitat. There is only a modest amount of spawning habitat. It is not the abundance of spawning habitat that you see in some other, what I would call, more typical Puget Sound streams.

Q. We have had a lot of testimony in this case regarding whether or not this bypass reach is spawning limited or rearing limited. Do you know whether the bypass reach is spawning limited or rearing limited?

A. No, I don't.

Q. Do you have an opinion on that matter?

A. I have an opinion that there is certainly the possibility, a very real possibility, that it could be spawning limited, and that there is some special circumstances that make it more likely to be spawning limited than the typical Puget Sound stream.

Q. Could you explain what those characteristics are or what it was that you saw that formed that opinion?

A. One factor is that there are canyon walls, bed-rock walls that come down, and the stream channel does not spread out into a floodplain. Once the stream channel ends, it pretty much - the bank goes steeply uphill.

Q. Mr. Beecher, I am sorry. I got a little bit out of order [155] and I definitely want to come back to where we are, but before you do that could you explain what

those two terms mean, rearing limited and spawning limited?

A. Those two terms, they imply that there is one factor – that one or the other factor is the factor that limits how much production of steelhead, or whatever, salmonid species, or other species you might be interested in, occurs.

I have some concerns about those particular terms in the implications that they are the one and only factors. There is a lot of work and I think a lot of opinion among researchers in stream ecology that it's an oversimplification to say that there is one factor that limits production, that in fact there are many things which, if they could be changed, might produce a change in production.

Q. Okay. Given that caution, can you go on and tell us what those terms mean?

A. Spawning limited would mean that the amount of production is proportional to the amount of spawning that can take place and presumably to the amount of spawning habitat that's available. And that changes in other factors such as rearing would not affect production.

Likewise, rearing limited implies that the amount of rearing habitat that is available is going to control the [156] amount of production, and that changes in other factors do not affect the amount of production.

Q. Okay. Mr. Hilgert testified that there is a general assumption on behalf of the agencies and biologists generally that Puget Sound streams are rearing limited. Would you agree that there is that general assumption?

A. I think there is that general assumption. There are some qualifiers there. There are some qualifiers but, yes, that is a widely-held assumption, again, generally, for Puget Sound streams.

Q. Okay. And you testified just a minute ago that in your opinion that assumption may not hold true for the bypass reach.

A. That's correct.

Q. And could you go ahead then and get back to where you were and tell us what it is about the bypass reach that leads you to believe that that general assumption may not be true?

A. All right. One factor about the bypass reach is that there is not a lot of spawning habitat, and one of the reasons is because it is a confined bedrock channel with gravel accumulations in portions, but it is not, as in the typical Puget Sound stream and the lower Dosewallips as an example of that, where you have a broad floodplain, that the entire channel is gravel and is generally suitable to [157] some extent for spawning. That is not the case in the bypass reach. Just patches of spawnable habitat. It's much less, much smaller ratio of spawnable habitat to total area of the bypass reach.

Another factor is that the bypass reach is very close to the upper limits of accessibility for anadromous fish. Now, we are concerned about seeding of a reach with juveniles. If you want to get a fish to rear in a reach, first you've got to have fish have eggs introduced into that region, either there or upstream from it. Well, there are very few eggs that are introduced upstream of it because

there is a very - you know, you are very close to the upper limits of fish accessibility. So there is very few fish, fry, that are going to trickle down into this area to seed any area, so it's going to be very important to insure that all the habitat, all the rearing habitat is occupied, you are going to have to get fish in there in the first place. Well, the only way you get fish in there is either by spawning fish or possibly by planting. But planting in that particular case is not very feasible, again, because of the terrain.

Q. Are there any other factors that lead you to believe that this bypass reach may be spawning limited?

A. I think those are really the two primary factors that lead me to think that it could be.

[158] Q. In the final analysis, however, are you in the same boat with Mr. Hilgert, that you simply don't know whether it's rearing limited or spawning limited?

A. That's right, I am. I don't know.

Q. Mr. Hilgert testified that he used a method called the habitat ratio, and he said that using that method he was able to support his generally-held opinion that this stretch of the river is rearing limited. Are you familiar with this habitat ratio method?

A. I'm familiar with it.

Q. Could you explain to us how that works?

A. You need to know the mortality rates between each successive life stages, between each successive life stage, so that you can calculate how many fish of one life stage it's going to take to produce a certain number of

another life stage. You also need to know how much habitat an individual fish requires for each life stage.

On the first case, as far as the mortality rates, there are estimates from various studies that do range fairly widely so that it becomes - in doing a habitat ratio, you have to make an assumption that one particular rate is applicable, and those rates can vary all over the place. And those rates also can be affected by habitat quality, including aspects of habitat quality that are influenced by flow. Therefore, that's a major uncertainty [159] in using habitat ratios.

Another, and I think a much bigger uncertainty in using habitat ratios, is trying to estimate how much habitat does an individual fish use? How much habitat is needed by an adult for spawning, that may be reasonably well known. How much is needed for a rearing juvenile is not well known.

I think we recently calculated or determined from various literature that there are ranges 200-fold, ranges in estimates of how much habitat a juvenile steelhead requires. You have the same sort of thing for each life stage. You have these attempts to quantify. In addition to that complication, then you you have to make the conversion of habitat, as has been measured in habitat area occupied by a fish, as has been measured in relatively few studies to weighted usable area, and the two cannot be converted one-to-one. And so there is a great number of problems with using habitat ratios.

Q. Given these three problems that you have listed with this habitat ratio technique, do you have an opinion as to the reliability of this approach?

A. I don't feel that it's reliable.

Q. To your knowledge does the Department of Wildlife except habitat ratios as a method for determining how fish will do in a given stretch of river?

[160] A. No, I don't.

Q. Do any of the resource agencies that were involved in the Elkhorn project accept habitat ratios to your knowledge?

A. Not to my knowledge.

Q. We heard a description of the life cycle of salmon from Mr. Bruya. Could you briefly tell us how the life cycle of a steelhead is different from the life cycle of a salmon?

A. The life cycle of a steelhead is in many ways -

THE WITNESS: Thank you, Brad.

A. (Continuing) The life cycle of a steelhead is similar in that similar life phases, the timing is different. Steelhead spawn generally in the spring during or just prior to the spring runoff flows. They rear in the stream for usually two full summers, two full years, so they rear for a longer time in the stream than any of the salmon. They migrate back up to the home spawning areas from the sea generally during the winter, and they can migrate almost any month of the year, but the bulk of them, particularly the winter steelhead which is what we have most of in the Puget Sound area, tend to migrate during the winter and into the early spring.

Q. How long do they stay out in the ocean?

A. They stay out in the ocean approximately a year-and-a-half, over two summers. They enter the ocean [161] in the spring. They stay in the ocean through that summer, through the following winter, the following summer and then return.

Q. Okay. Do steelhead juveniles - or let me ask it this way: Do you agree with Mr. Hilgert's testimony that steelhead, juveniles and fry, generally bury into the gravel in the streambed when the water temperature approaches, either reaches eight degrees centigrade or colder?

A. Yes, I would agree with that.

Q. Do you have any personal experience that would verify that phenomena?

A. Yes, I have. I have done some snorkeling in some streams in this area, and streams where I have found in warmer weather large numbers of juvenile fish, both coho salmon and steelhead, and then have snorkeled there in cold weather and been unable to see any fish whatsoever.

Q. Were you here for Mr. Hilgert's testimony?

A. Yes, I was.

Q. And did you hear him several times use the 50 percent exceedence flow as representing existing conditions?

A. Yes, I did. I believe he qualified that and did not state that it was - I think he said it was an index of existing conditions and backed away somewhat from saying that it was existing conditions.

[162] Q. Mr. Beecher, I am looking for a certain exhibit, which has been called Exhibit A-21. Are you familiar with that exhibit?

A. Yes, I am.

Q. And is that the exhibit which is a table and it compares the agencies' stream flow recommendation and Tacoma's stream flow recommendation with the, quote, existing conditions, unquote, represented by the 50 percent exceedence flow?

A. Yes.

Q. Do you have any opinion of using the 50 percent exceedence flow as a representation of existing conditions?

A. I believe it's inappropriate and does not represent existing conditions as experienced by any fish population inhabiting that area.

Q. Could you explain your opinion?

A. Yes. And I think I would have to concur with Mr. Caldwell who stated that the fish are opportunistic. The flows vary widely. The fish experience a wide range of habitat conditions as flows and other physical factors change, biological factors also.

I don't know. Did I answer your question?

Q. I think you did.

In your opinion, what is the optimum flow for fish in the Dosewallips River and in the bypass reach?

[163] A. I don't know what the optimum flow for fish is. It would be very complicated and probably impossible given our current state of knowledge to determine what an optimum flow for fish is.

Q. Let's say you were made the river czar of Washington and you could pick a flow that in your opinion you felt would best protect the fish in the river. What flow would you pick?

A. I would have to consider that I would be more concerned about the risks of losing what we have, and given that the rivers in Washington have historically produced fish which have become adapted to the general seasons and the general types of flow conditions that occur in different seasons, if I were to recommend optimum, I would not recommend any deviation from natural flows because I would be concerned lest I cause some adverse impact to fish populations and other associated wildlife populations.

Q. Now, the term optimum flow has been tossed around a lot in this hearing, and does the term optimum flow have a specific meaning in the IFIM context?

A. I think it is a term that is often used sort of as a shortcut to saying what is often meant, but I think maybe different people mean different things by optimum. I try to avoid the term myself. I don't know that I always succeed, but I try to avoid it and try to look at the peak [164] of the curve of weighted usable area versus flow. And that maximum weighted usable area I think is sometimes referred to erroneously as optimum.

Q. What are the habitat factors that are measured by the IFIM?

A. Depth, velocity and substrate and/or cover.

Q. In the Elkhorn project, what were the factors that were looked at?

A. Depth, velocity and substrate.

Q. Are there factors of habitat which are not measured and factored into the IFIM in the ultimate weighted usable area result?

A. There are other factors which are considered in a qualitative sense in the broader part of IFIM, again in the more qualitative. After you have the PHABSIM, the weighted usable area results, you have to go back and – in fact, the slide show, slide tape show yesterday morning talked about once you've looked at what you think your recommendation might be, then you have to go back and look at those other factors, reassess it in light of everything else you know about the ecology of the stream.

We try to do that and there are – did you ask me to try to enumerate some of those factors?

Q. That was going to be my next question.

A. Oh, okay. I couldn't remember whether you asked that as [165] part of that question.

Things like predation, competition, territoriality, many of these kinds of things go hand in hand. Cover, which is at best only partially incorporated into PHABSIM. Incubation is only partially addressed in PHABSIM and not terribly well. Out-migration flows, migration barriers in passage, those are factors that are not really

addressed in PHABSIM. Water chemistry, physical factors like temperature, those are not addressed in PHABSIM.

Q. So none of those factors that you have just mentioned are actually factored into the weighted usable area?

A. No. And those all have to be at least factored in in a qualitative sense.

Q. And does that factoring in in a qualitative sense occur at the interpretation phase of the IFIM?

A. Yes, it does.

Q. So was it an examination of those types of factors that led to the difference in flow regimes?

MR. BUBENIK: Objection. Leading.

MR. HARRISON: Overruled. You may answer.

Q. (By Mr. Manning): Led to the difference in flow regimes between Tacoma and the agencies?

A. I'm not sure I can answer that because what I can really answer is how I, as one of the participants in the agency [166] group that was developing the flow recommendation, we considered those factors.

While I've listened to what Mr. Hilgert has said in developing the applicant's recommendations, their flow proposals, I can't really compare the two. All I know is that those factors were included in the agency flow proposal.

Q. Given the fact that weighted usable area is only a function of three elements of habitat, do you have an opinion as to the reliability of using weighted usable area as an equivalent of habitat?

A. Yes, I do have an opinion. My opinion is that it is a tool, but it's an incomplete tool that should not be used by itself. And I have had some experience where specific analyses have showed that there really are some differences between weighted usable area and habitat. Apparently - well, even just using those variables, there are a lot ways to interpret and it is a crude index.

Q. Okay. As a final question, given your opinion of the 50 percent exceedence as a representation of existing conditions, and given your opinion of using weighted usable area as the equivalent of habitat, do you feel that Tacoma's consultant can claim with any accuracy that Tacoma's flows will provide as much as or more habitat as is available under, quote, existing conditions?

[167] A. I have real concerns that there will be a real risk. I cannot quantify that risk, but I think there is a real risk that with Tacoma's proposed flows there could be adverse impacts to fish production.

Q. As usual - Mr. Faulk is used to this - I lied by saying this was my last question. This one is, though.

In your opinion, are the agency flows enhancement flows? Will they actually improve fish production in the river?

A. I doubt it. I seriously doubt that they would improve it. I would hope that they would be adequate to protect it.

MR. MANNING: Thank you very much.

* * *

BEFORE THE POLLUTION CONTROL
HEARINGS BOARD
STATE OF WASHINGTON

PUD NO. 1 OF JEFFERSON)
COUNTY AND CITY OF)
TACOMA DEPARTMENT OF)
PUBLIC UTILITIES,)

Appellants,)

vs.)

NO. 86-118

WASHINGTON STATE)
DEPARTMENT OF)
ECOLOGY, DEPARTMENT)
OF WILDLIFE, AND)
DEPARTMENT OF FISHERIES,)

Respondents.)

TRANSCRIPT OF PROCEEDINGS

December 17, 1987

Lacey, Washington

DAY THREE

Cheri L. Davidson
Registered Professional Reporter
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* * *

[39] Q. Ms. Caldwell, could you please state your name and spell it for the record?

[40] A. My name is Jean Caldwell, spelled J-e-a-n, C-a-l-d-w-e-l-l.

Q. And by whom are you employed?

A. I'm currently employed by the Tulalip Indian Fisheries Department.

Q. How long have you been with the Tulalip Fisheries Department?

A. Since June, 1987.

Q. What are your job duties?

A. I'm a fisheries biologist working on instream flow issues, water planning issues, small hydropower project review, and issues relating to the timber fishing wildlife agreement.

Q. In the package of exhibits before you, is your resume one of those exhibits?

A. Yes.

Q. Which exhibit is it?

A. It's R-9.

Q. Okay. Using that as necessary, could you tell us about your educational background?

A. I have a bachelor's of science in Environmental Science from Halsey College at Western Washington University. I worked for - I've worked for the San Francisco Bay Conservation and Development Commission

between 1980 and 1985. I worked for the Lumme Indian Fisheries Department [41] doing environmental review, major project review, small hydro project review, instream flow study, scoping, and water rights negotiation, 1985 to 1987.

I worked for the Washington Department of Fisheries habitat management section both performing instream flow studies for base and planning and reviewing instream flow studies done for hydropower projects. The job was conceived as to provide technical assistance to the other biologist in the habitat management section, which was specifically relating to hydrology and instream flow issues.

Q. Okay. And after the Lummes, who did you work for?

A. Washington State Fisheries.

Q. Can you describe your description with Fisheries and what your job duties were?

A. I just did.

Q. Oh, you did. I thought you were still on the Lummes. I am sorry.

A. No.

Q. Okay. And where did you go after Fisheries?

A. To the Tulalip Fisheries Department Indian Fisheries Department.

Q. And that started in -

A. June, 1987.

Q. Okay. When did you first get involved with the Elkhorn [42] project?

A. I was hired in April, 1985, so it would be starting April 15th, 1985.

Q. At what stage was the Elkhorn IFIM study in at that point?

A. At that time the consultant had run the hydraulic model and had come up with the questions about the best way to run the hydraulic model and the process of discussing that, and discussing it with the instream flow report was either going on or had just started.

Q. Have you ever been to the site?

A. Yes.

Q. How many times?

A. Once.

Q. And did you attend meetings regarding the Elkhorn project?

A. Yes.

Q. Were you involved in the actual setting of the agency flow regime?

A. Yes.

Q. Now. Mr. Ken Bruya has previously testified in this case, and he is also with Department of Fisheries. Was he your boss, or how did that work in the Department of Fisheries?

A. He was not my boss. I was part of a section of the [43] Department of Fisheries that consisted of two

civil engineers and myself, and we were supposed to provide technical assistance to other biologists involved in various projects, and Ken was responsible for the entire review of the Elkhorn project, and I was supposed to provide assistance specifically with relationship to the instream flow study and -

Q. Okay. You may have said this also, and I am sorry that I was not listening, but were you the Department of Fisheries' instream flow expert when you were there?

A. Yes.

Q. Now, there is a packet of exhibits in front of you, and I wonder if maybe we could take the time now since we have not talked about all of these to go through them fairly quickly and just identify what they are. These have all been stipulated to and are in evidence.

A. Do you want me to just start and say this is R-3, this is what this is?

Q. Right, right.

A. This is a - R-3 is a table of the medium monthly flows by month with the agency's flow proposal and both the applicants' flow proposal on it. It's a small version of the chart we have been referring to.

R-4 is a Xeroxed copy of a hydrograph that I drew using information from Hosey and Associates, and I [44] believe the information I got it from is from what is called Exhibit A-21. The blue pen - at least it's blue on mine - is the agency's proposed flows.

Q. Is this a smaller version of R-4?

A. Yes, yes, it is.

Q. Okay. What is R-5?

A. R-5 is a glossary of instream flow terminology that was developed by Hal Beecher, Brad Caldwell, and myself for a class that we taught in 1986 to agency biologists interested in learning more about instream flows used. It was an attempt to simplify some of the jargon that we all throw around too much.

Q. Okay.

A. Do you want me to go through the resumes too?

Q. No, just - Exhibits R-6 through R-11, what are they?

A. Brad Caldwell's resume, Hal Beecher's resume, Ken Bruya's resume, my resume, Elaine Rybak's resume, and Steve Ralph's resume.

Q. Okay. How about Exhibit R-12?

A. R-12 is something we developed in answer to the interrogatories, a table of percentage reduction in predicted weighted usable areas if the flows proposed by Tacoma were adopted for this project.

Q. Instead of Ecology's flows?

A. Instead of Ecology's flows.

[45] Q. Did you prepare R-12?

A. Yes.

Q. Okay. How about R-13 through R-24?

A. Well, all R-13 is - it looks like responses to meeting notes and meeting records. Should I just go one by one, Jay?

Q. No, just generally what that group is.

A. Correspondence relating to the project from the various agencies and Hosey and Associates.

Q. Okay. And R-25?

A. R-25 is a letter to Jefferson County PUD from Ecology about the water quality certification containing the agency's recommended flows among other things.

R-26 is at least some and probably all of the weighted usable area versus flow information that we used to develop the flow regime that we recommended.

Q. Now, is this what we have been referring to as the model output or the weighted usable area tables?

A. That's correct.

Q. This is what the computer actually spits out after it's done doing its thing?

A. That's correct.

Q. How about R-27?

A. R-27 is a retyping of the work sheet that we used to - it's not what we used to develop the flow regime. It's [46] more like a summary that went around for everybody's information so that we would all have record of the final flow regime and what we did.

Q. Okay. R-28?

A. R-28 is a periodicity chart for salmon and steelhead on the Dosewallips River showing what life stages are in the river at what months.

R-29 is a letter from Becky Reinecker of Hosey to Fred Hunn of Department of Ecology containing the 1986, October 21st, 1986, letter from FERC to Jefferson County PUD.

Q. Are you familiar with that letter from FERC?

A. Yes.

Q. This is the so-called deficiency letter?

A. That's correct.

Q. What is that?

A. It's the FERC response to the draft license application.

Q. Okay. Thank you.

When did the agencies formulate their flow regime recommendation?

A. We started at a meeting on June 10th, 1985 where we, Elaine Rybak and Hal Beecher and myself, sat down and did some original number crunching and put some recommendations together. I have notes that there was an agency meeting on August 30th, '85 where we discussed it, [47] and I also have notes that on September 25th, 1985 there was a conference call between agency and tribal biologists where we got to what we now consider the final flow regime, which is the one up there (indicating). So it was during that summer period where we were reviewing it and putting it together.

Q. And that is what we have been referring to as the interpretation phase of the IFIM process?

A. That's correct.

Q. What was the basic approach that was utilized by the agencies?

A. We were trying to optimize for the species that would be the most sensitive to the things that the IFIM study was measuring, which was depth, velocity, and substrate. And our optimization, well, because of that we ended up putting a lot more emphasis on the spawning or the adult life stages than on the juvenile and fine life stages because it's my opinion that they are more sensitive to changes in the things that the IFIM study measures.

Q. When you say optimizing for a given species or life stage, what do you mean?

A. Those terms you use real loosely in - it's what you mean when you're talking about interpreting IFIM values. It usually means picking the weighted usable areas, optimizing meaning the flow that would give you the best [48] predicted usable area.

Q. Now, in your opinion, is that automatically the best fish production flow?

A. There's no way to know that. There's no way to know that.

MR. BUBENIK: Excuse me. I did not hear your answer.

THE WITNESS: There's no way to know what the best fish production is.

MR. BUBENIK: Thank you.

Q. (By Mr. Manning) Was it the intent of the agencies to improve or enhance the bypass reach?

A. That was not my intent, no.

Q. Are you aware of whether it was anybody's intent?

A. It's my opinion that that was not anybody's intent.

Q. What I would like for you to do now - oh, before we do that I would like to ask you if you are familiar with Exhibit A-21, which is the - well, I will just ask you, are you familiar with Exhibit A-21?

A. Yes.

Q. And what is that again?

A. It's a chart that I first saw at a meeting in January, 1986 where Hosey came in with what is now called the applicant's counterproposal.

Q. Okay. What I would like you to do now is - and [49] specifically using R-27 and A-21 as necessary - ~~explain to us~~ how the agency flow regime was actually developed, and let's start with the month of January.

MR. HARRISON: Excuse me, Mr. Manning.

R-27 is just something we have one copy of, or do we all have a copy of it?

MR. MANNING: There is an R-27 in each packet.

MR. HARRISON: All right. So we are going to be looking at that. And then A-21

MR. MANNING: Correct.

MR. HARRISON: (Continuing) does everybody have a copy of that?

MS. BENDOR: I don't.

MR. HARRISON: We have one. Do we have more than one?

MR. FAULK: It's in the packet.

MR. MANNING: It's attached to the brief.

MR. HARRISON: Oh, okay. Fine.

Q. (By Mr. Manning) Ms. Caldwell, I don't mean to limit you in the exhibits that you need to reference. If there are others, please feel free.

A. Should I just start?

Q. Just wait a second.

Okay. Why don't you proceed? Let's start with January, and if you could explain to us how the agency [50] flow regime was developed.

A. Before I start with January I would like to go a little bit more into some of the criteria that we set up before we started going about it.

Q. Please do so.

A. Okay. In the meeting between Hal and Elaine and myself we made a few assumptions because when you have an array of information like you get from an

IFIM output you have to make some assumptions, and you have to make some priorities on what species and life stage you're going to talk about. So some of the assumptions we made were that if we could optimize, well, using the term in the way that I talked about it before, if we could optimize for steelhead, that that would take care of whatever resident fish were in the bypass reach.

For the salmon species we decided we would pay attention to fall and spring chinook and coho, and that given that the different agencies and tribes all have different, slightly different, management priorities and species of concern, that if we were able to meet the different agencies' and tribes' varying priorities consistent with current management and try to not foreclose options for future managers, since this is a hydro project and they have water rights and water rights are forever, that that would take care of our agency [51] responsibilities of our management.

So we were trying to be consistent with what we knew about current management and not foreclose options on future management.

We also decided or made a professional judgment that when possible we would optimize for spawning life stages or adult life stages more than rearing life stages.

Q. Could you explain why?

A. It was our opinion that the spawning life stages are more sensitive to changes in the things that the IFIM study measures than the rearing life stages.

Q. Those being?

A. Depth, velocity, and substrate. We were – at that time we were starting to see more information on the topic that has been discussed already, that in the winter there's a good chance that the juvenile fish are not going to be active and out of the gravel that much.

And even though fry preference information was put through the model, we were coming to the conclusion at the time, which is still my conclusion, that fry's habitat requirements are not well modeled by the IFIM and that in fact fry preference information is erroneous because what it does – the computer model in essence tries to dry up the river to create the kind of edge effect, the shallow, slow water that fry like, and that's [52] just not an accurate representation of the kind of habitat needs that this model fish have.

So we weighted the fry life stages not at all and the juvenile life stages much more lightly than the spawning ones because we were a lot more comfortable with that assumption because of the limitations of the computer model.

Q. Ms. Caldwell, could you explain the term edge effect, what that refers to and what it means?

A. If I said edge effect that's not correct. I think what I meant was edge habitat, that where you find fry in streams is in shallow, slow water, back waters, or near the edge of the stream, and that that's – the computer model really does not take that into account that they are on the edges. It will try to create the whole stream to be that, to be shallow and slow and this steep (indicating), and that's just because it's simple, a simplistic thing, okay?

Q. Okay. Thanks.

A. Okay. So given those weightings and the emphasis on the adults, we kind of - we did - it's a little difficult to explain. It's kind of a two-track calculation because each species has a different optimum, but we tried to see if we picked the optimum for one species, say coho spawning, what it would do to the other species present [53] and if we pick the optimum for say steelhead, what it would do to the other species present.

So we calculated the sensitivity of each life stage to the changes in flow. Some of the output indicates that a change in flow isn't going to affect every prediction the same. Some of the output indicates that for some life stages it would be very sensitive to changes in flow, whereas another life stage may not be.

So we tried to see if we could optimize for as many of the top two I guess spawning life stages as possible and then if we picked that flow what it would do to the other ones, and that is reflected in - and that's what R-27 - that's what generated R-27.

So we didn't try to get all of those to be a hundred percent because you can't do that. What we tried to do was to get the spawning species a hundred percent and not totally take away habitat for the rearing species.

Q. Okay. In doing that, Ms. Caldwell, was at least a part of what you were doing based on Exhibit R-26, which is the weighted usable area output?

A. All the calculations on how habitat would change were based on R-26.

MS. BENDOR: Excuse me. I lost that.

THE WITNESS: All the calculations based on how the habitat would change are calculated from R-26. [54] That's what that - that's the numbers that everybody uses.

Q. (By Mr. Manning) Okay. Should we start with January?

A. Sure.

For January -

Q. And you are now looking at R-27?

A. I'm looking at R-27, and the notes that I am looking at are the original calculations that we made.

Q. Okay.

A. For January we - the species list is there. Looking at coho spawning, the optimum predicted weighted usable area is at 140 CFS. The NC that is across from fall and spring chinook incubation means not calculated, and it's to remind us that there is incubation going on this and that even though it's not calculated in the IFIM we have to pay attention to it, and I'll get back to why we have to pay attention to it in a minute.

So at 140 CFS Chinook spawning we managed to get the coho and chinook juvenile up to 96 percent of optimum and steelhead and chinook at 24 percent of optimum.

Q. And when you use the term optimum, how are you using that?

A. The most habitat predicted by the output by the IFIM model is optimum for each species and life stage.

Q. Now, in January you have coho and chinook juveniles [55] listed twice.

A. Mm-hmm.

Q. In one summer follows the term and then the other winter follows the term -

A. Winter.

Q. (Continuing) and the percentages of maximum weighted usable area vary.

A. Mm-hmm.

Q. Could you explain that?

A. I wasn't on staff at the time that the preference groups were decided on, but it was clear that we were trying to address the fact that we know there's differences in behavior between summer and winter. And because this is sort of an evolving science or study - that was right about the time that at least for the salmon juvenile species I was starting to think that we didn't really have enough information to split out summer and winter, that it's quite possible that in the winter the habitat needs, because rearing fish would either be in gravel or in off-channel habitats or side channels or flood channels, that we weren't describing their habitat needs very well anyway and that we really didn't quite have the information to have these summer and winter groups to be so definite, and in fact I don't believe we ever ran a summer winter salmon curves after this. I'm not totally [56] sure about that.

And we don't - at least when I left Washington State Fisheries we weren't recommending their use. We kind of

collapsed the whole juvenile preference curve into one preference curve for both coho and chinook juveniles, and we don't usually give it a lot of weight in analysis, even though from snorkeling I believe that there's a difference in behavior between coho and chinook. It's just my opinion that there isn't enough data to do this.

So this is sort of the last time we had this ornate summer and winter thing. The reason that I - I think the reason we originally looked at summer juveniles was because we figured if they were out they would be active and less acting like a summer fish. I think that's the reasoning. But in any case that was not terribly highly weighted in our analysis.

Q. In using winter or summer curves, would it have changed the ultimate flow recommendation for January if you had used summer or winter preference curves for coho and chinook juveniles?

A. No, for two reasons. Because of our higher weight on coho spawning, which I already talked about, and because of the fact that we were trying to keep a reasonably steady minimum flow regime across the months that they [57] were in incubation in order to not allow spawning say at one flow and then drop it really far the next month and possibly risk drying up eggs or something like that.

So because of the two needs for flow regime stability and spawning and prioritizing for spawning species, I don't think it would have changed, no.

Q. Okay. Why don't we go on to February?

A. January and February were the two most difficult months to deal with, February in particular because there wasn't spawning species in the way we'd arrayed our timing charts. There wasn't a spawning species to prioritize for; therefore, we took the peak of the steelhead juvenile curve, we used the winter curve on Department of Game's recommendation, and the peak of the coho, chinook juvenile curve is in the summer curves on our recommendation, and since they happen to be the same flow, a hundred CFS, we said we will go with that.

We also made a determination that that drop from 140 to a hundred would probably not be a problem for incubation, so we did look at that as well.

For March - should I go on?

Q. Go on to March.

A. For March the prioritizing was for steelhead spawning, which needs 200 CFS. There's - we figured that there would be steelhead and salmon incubation but that the [58] flows would be stable from 100 to 200, and that also happened to give us pretty high predictions of optimum weighted usable area for the juvenile species, so we decided that the 200 was going to be fine.

For April, again 200 based on steelhead spawning predictions. It gives 92 percent of optimum for the salmon juveniles, and it also happens to give a hundred percent of optimum for steelhead juveniles, which is sort of a bonus.

Q. And was the 200 also adequate for incubation?

A. Yes, in our opinion.

Q. What is the final SPP all anadromous out-migration?

A. That means that during April all of the out-migration occurs, and theoretically if you were going to do a flow regime you would provide outflows. It's not in there because we think we could provide it with a minimum flow. Obviously running the river project is not going to do that, but it's in there to remind us that that has happened.

Q. So specific preference curves were not run for the out-migration life stage?

A. No, no. That's -

Q. Is it your opinion that 200 CFS would be adequate for the out-migration?

A. No.

[59] Q. Then why was 200 recommended by the agencies?

A. Because it maximized predictions for steelhead spawning, and given that the hydro project isn't going to take the peak off the daily peak flows, that's going to be where the out-migration will occur.

Q. I am not sure I follow that. Could you explain that in a little more detail?

A. Okay. This is the minimum flow regime (indicating). The flow events that out-migration is going to occur at are going to be flow events that aren't changed by the hydro project, so they will be the high flow.

Q. Above the maximum machine capacity of 600 CFS?

A. That was the assumption I made, yes.

Q. Okay. Let's move on to May.

A. For May we picked 200 CFS based on maximizing steelhead spawning. It also happens to give you a hundred percent of the predicted optimum for steelhead juveniles, which was nice.

Q. And again, was incubation considered in May?

A. Yes, in the sense that we were trying not to bounce the flow regime around.

Q. Okay. June?

A. We said that the spring chinook would start coming up the river in June. That's what the adult holding means, that there was a curve run or the theoretical preference of [60] the fish that has to be in the river a few months.

And the peak of the predicted weighted usable area for adult holding happened to be 200 CFS, which also happens to be the peak for steelhead spawning, so we were able to maximize for both our adult life stages at the same flow.

Q. And there are three more notations there in June. Would you go over those?

A. Coho and chinook juveniles is at 92 percent of the predicted weighted usable area. Salmon and steelhead incubation is just there, so we remember that it's in the river and we need to not drop the flows too much

below the flows that they were spawning at, and the out-migration notation is there just so we remember that the life stage is happening.

Q. Okay.

A. For July it's the same as June. Our reasoning is the same as June. I think everything is the same with the exception of the out-migration flow.

Q. All right.

A. For August we picked the 200 CFS because of the spring chinook adult holding curve. It also happens to maximize for steelhead juveniles and doesn't hurt coho and chinook juveniles too much, but we picked it basically based on the adult life stage.

[61] Q. Now, the holding, could you explain what is going on at that stage with the fish? I mean, what are they actually doing?

A. Hanging out.

Q. When do the spring chinook come into it?

A. We were assuming in this analysis that the spring chinook would be in the river during June, July, and August and they would start spawning in September, which is basically entering the river and waiting for those three months.

Q. Okay. September?

A. For September we decided that we would have both spring chinook and fall chinook spawning as species of concern. In this case if you pick the optimum for

spring chinook spawning, which was 150 CFS, fall chinook was only 95. If you pick the optimum for fall chinook spawning it had more affect on the spring chinook predicted habitat. In other words, the - it was - oh, boy.

Picking the spring chinook optimum affected fall chinook less than picking the fall chinook optimum affecting spring chinook, and for that reason and because of the importance of the species we picked the spring chinook optimum instead of the fall chinook optimum.

Q. Okay. And how about - how did we do for the other life stages?

[62] A. The percentages are on there, and we decided it wasn't hurting them too much, or at least as far as the predictions went, and the incubation flow is on there so that we don't drop the minimum flow for the months later than that much below 150.

Q. Okay. Shall we move on to October?

A. For October we said that the life stages of priority would be fall chinook spawning and coho spawning. We managed to get optimum and very close to optimum at 140. That does not drop it too much below the spawning flows earlier in the year, so we said that would take care of incubation. It also gives you reasonably high predictions for the steelhead. The split between the summer juveniles and the winter juveniles was done at Game Department's recommendations and is in there for information purposes.

Q. Okay. November?

A. November. Species of concern was coho spawning, which is predicted maximized at 140, and fall chinook spawning, which gets close to maximum at 140. The juvenile information is as you see, and since 140 is very close to the minimum flows recommended for the rest of the fall we decided that would take care of the incubation requirements.

Q. Okay. And finally December.

[63] A. I think December is the same as November with the exception of - we said the fall chinook would be done and it would just be coho spawning as the species of priority.

Q. And again, is incubation a concern at this time?

A. Yes, and we decided that since we weren't dropping the flow too much from what it had been in the fall that that would take care of that.

Q. I notice on Exhibit R-27 after each minimum flow number it says in parentheses or natural flow. Could you explain that?

A. It's a common thing when we put together a minimum flow recommendation, especially for a hydro project that's run on the river and not storage. What we are requesting is the minimum flow, or if they don't want to provide the minimum flow they can provide the natural flow, which obviously in a hydro project is probably going to be less than that. In other words, we are not saying that they have to provide the minimum flow at all costs, which you could say if the project had storage.

Q. Could you make clear one final time for me what the percentage number refers to in the far right-hand column in Exhibit R-27?

A. If the flow we picked for the recommended flow is the same as the flow predicted by the IFIM model output as [64] the best weighted usable area for that life stage, if it's the same it's a hundred percent; if it's less than that it is whatever percentage that flow is of the predicted optimum for that life stage.

Q. The predicted maximum weighted usable area?

A. Weighted usable area.

Q. I would like you to explain in a little more detail what this Exhibit R-4 means and what these lines refer to.

A. Exhibit R-4 is a flow exceedence hydrograph for the Dosewallips River, and it's a blowup of one I drew, and the numbers on the hydrograph we got at the January, 1986 meeting from Hosey and Associates, and it's an attempt to show the range of flows that occur at the project intake.

It was to develop - some of the information to develop this hydrograph was from the real data on the gauge at the Dosewallips River, and some of it was data from the Duckabush and the Snoquamish River. I believe that to be true. I was told that by Hosey's engineer that that was how they arrived at the hydrograph.

Q. Okay. On Exhibit Number 4, the column on the left-hand side, what does that refer to?

A. The column on the left-hand side is cubic feet per second, and it's a semi-log scale so that in order to

get the range of flows necessary to show this hydrograph [65] you -

Q. And could you explain again the 90, 50, and 10 percent numbers that are on the right-hand column?

A. They refer to flow exceedence values, which are generated by taking by month all the daily flows in that month and ranking them by size. The 90 percent exceedence value is that flow that is equal or exceeded 90 percent of the time.

Q. Under natural conditions?

A. Under natural conditions, and can be seen in your mind as a very low flow. The 10 percent exceedence flow is that flow that has met or exceeded 10 percent at the time and it can be seen as a flood flow, just for, well, if you want to simplify it.

This is a kind of typical hydrograph for a glacial stream in the sense that it has two peaks to it, one during the rainy season in the winter and one during the snow melt season later in the spring.

Q. Okay.

MR. HARRISON: Excuse me, Mr. Manning, does that 50 percent exceedence line on Exhibit R-4 correspond to the left-hand column on Exhibit A-21 that we have been calling 50 percent exceedence?

MR. MANNING: Yes, it does.

MR. HARRISON: Thank you.

[66] (Pause in proceedings.)

Q. (By Mr. Manning) Could you generally characterize the agency flow proposal as it relates to this exceedence table?

A. The numbers generated from an IFIM or PHABSIM computer model are generated by the computer model on the flows that you ask it to analyze, and it's done without reference to whether or not that flow occurs in the stream and how often. So that the results from an IFIM computer model have got to be evaluated critically against hydrographic, hydrologic statistics in some way or another.

There's different ways to do it. I like flow exceedence hydrographs for a lot of reasons to do that because they give you a real good idea of the range of conditions as well as the time of flows. There's several reasons to do that. The main reason is if you're in an agency situation and you're asking for a minimum flow it's real helpful if you don't come in there asking for the 10 percent exceedence flow as the minimum flow. There's a way to - it helps you check the computer predictions against some representation of the reality of what's going on in the stream.

In this case, because we had generated our flow recommendations before we had the hydrologic statistics [67] from the consultant, when we compared the two, I personally was a little surprised at how low our flow recommendations were in relation to the flow exceedence. And I would characterize them as in most months being at or below the 90 percent exceedence flow except

for the late summer months when they approach the 50 percent exceedence level.

Q. And the agency flows are represented on Exhibit R-4 by the blue block of color?

A. Right.

MR. MANNING: That is all the questions that I have.

MR. HARRISON: Thank you, Mr. Manning.

Mr. Frymire?

MR. FRYMIRE: I have no questions, Your Honor.

MR. HARRISON: Cross-examine, please.

EXAMINATION

BY MR. BUBENIK:

Q. Do you mind if I call you Jean?

A. No.

Q. Can you, Jean, tell us the goals and policies of the Department of Fisheries in making instream flow recommendations like you did in this for this proposed project?

[68] A. If you want the policy word-for-word I can't quote it. I can tell you what my understanding of it was.

Q. Yes, tell us what your understanding is, please.

A. To recommend a minimum flow that would as far as possible meet the agency's goals on preserving, protecting, and enhancing a fisheries resource.

Q. Are the Department of Fisheries' goals and policies very similar to the Department of Game's with respect to your, well, what you just said are your goals and policies?

A. It's my understanding they are, but I can't quote you the Department of Fisheries' policy word-for-word on that.

Q. It's my recollection your testimony started on this proposed project as far as your involvement in June of 1985?

A. April, 1985. There was a site visit in March of 1985 with a member of the instream flow team that I was aware of because I know they knew I had the job at Fisheries, and they were aware that's how this site visit was handled.

MS. BENDOR: Could you speak up, Ms. Caldwell?

THE WITNESS: (Witness nods affirmatively.)

MS. BENDOR: Thank you.

Q. (By Mr. Bubenik) This one meeting which you talked about where these assumptions were made before you came to your proposed flow recommendations, did you state that you and [69] Hal made those assumptions?

A. I don't - no, I don't think I stated that.

Q. Who was directly involved in making those assumptions?

A. At the meeting where we started generating the flow regime the people that were there were Hal and

Elaine Rybak and myself. Over the three or four months when the agency and tribal resource people were discussing the flow regime it's my recollection that all of us discussed those assumptions and were aware of them.

Q. But you told us about I think six factors or conversations, assumptions.

A. Mm-hmm.

Q. Can you tell me when each one of these assumptions was made and who was present?

A. I don't know if I can do that. The -

Q. Was it one meeting, or was it, as you said, at several different meetings?

A. It's my recollection that the assumptions and our comfort with them was developed over the three or four months that we were developing the agency recommendations then.

Q. So by telling us about these assumptions at this time, what you are doing is going back what, from memory or your notes?

A. (Witness nods affirmatively.)

Q. Do you have any notes with respect to each of these [70] assumptions?

A. I'm going back from notes I took at the time and also notes I made for the class we taught in January of '86 when I was a little bit closer to the issue because in that class the Dosey was the case study that we presented, so I had done somewhat - I had done some of the summary work already because I was trying to - we had developed

the Dosey as a case study for this class that we gave to the agency biologists, so I had that summary that I had done for that as well.

Q. How much involvement did the Department of Ecology have in making these assumptions that you have stated?

A. It's my recollection that there was a set of us involved in discussing these assumptions and developing the flow recommendations and that Brad was one of those people of the group.

MR. MANNING: Brad being who?

THE WITNESS: Brad Caldwell, who was working for Department of Ecology.

Q. (By Mr. Bubenik) But I think you earlier testified that Hal, Elaine, and yourself were involved in -

MR. BENDOR: I am losing you on first names, folks.

MR. BUBENIK: Excuse me, I am sorry.

MR. BENDOR: I mean, I just have to think a [71] little harder. It's difficult.

Q. (By Mr. Bubenik) I believe you testified earlier that Hal Beecher, Elaine Rybak, and yourself were initially involved in making the assumption, is that correct?

A. That's - we were involved in the meeting of June 10th, 1985 where we first developed - we were not the only people involved the rest of that summer and fall.

Q. Can you tell us about the dates on the next meetings or telephone conversations?

A. I have notes from a meeting August 30th, 1985 where my notes say we discussed the flow recommendation.

Q. Who was present at that meeting?

A. My notes say that Elaine Rybak from U.S. Fish and Wildlife Service, Al Gross from the National Marine Fisheries Service, Steve Ralph from Point No Point Treaty Council, Brad Caldwell from Ecology, and myself and Ken Bruya from Department of Fisheries were present.

Q. And do you know how many of these assumptions were discussed and finalized at that meeting?

MR. MANNING: I am going to object to this line of questioning. The Department of Ecology has required the flow regime in question and is obviously satisfied with the assumptions that went into it, and apparently the implication of these questions are that somehow Ecology was unaware of them or did not approve [72] them.

I think that the proof is in the pudding. We have required these flows, and that is the only evidence we need that Ecology has accepted those assumptions.

MR. HARRISON: Do you wish to reply?

MR. BUBENIK: From Ms. Caldwell's testimony it appears that Ecology may have only been minimally involved, and Ecology is trying to I think tell us that they were involved, and I question whether that was actually the case.

MR. MANNING: Well, even if Mr. Bubenik is right, so what?

MR. HARRISON: I will sustain the objection because the flows have been adopted by the department, and they therefore are being reviewed on that basis.

Q. (By Mr. Bubenik) Jean, you talked about Exhibit R-27, and you may recall about the first of December at your deposition I believe you handed us a copy of this, an earlier draft of this document; is that correct?

A. That's correct.

Q. And on this earlier draft on the right-hand column are the letters NA opposite coho slash chinook incubation -

A. Mm-hmm.

Q. (Continuing) as contrasted with the letters NC, which are on the Exhibit R-27?

[73] A. Mm-hmm.

Q. What do the letters NA stand for?

A. They stood for not applicable.

Q. And the letters NC, what do they stand for?

A. Not calculated.

Q. Have the agencies changed their position with respect to coho/chinook as not being applicable as contrasted with not calculated?

A. No.

Q. What is the position?

A. This document that you have was a - this document that he has was a working draft circulated to the

agency biologists working on the Elkhorn project to document and help us remember some of the assumptions and things that we had worked out with regard to this project because there's a lot of instream flow projects and a lot of recommendations.

I put it together and sent it out for comment. I said NA because the IFIM computer model does not calculate incubation flows. It was not - and one of the comments I got back on this draft was that it's not NA. It's not not applicable. That was bad terminology. And so it's not calculated is a little bit more clear, and it really reflects the refinement of this document, which that is.

[74] Q. Are there other changes from this draft that we see on December 1st, 1987?

A. Yes.

Q. Can you tell us about those other changes?

A. We corrected a math error in January and November and December for calculations of the percent of optimum predicted for steelhead winter juveniles. We had calculated 97, and it is in fact 94 percent of optimum predicted weighted usable area. We added calculations for steelhead juveniles to the months of April, May, June, and July because they had been inadvertently left off, and we added calculations for the percent of optimum predicted for using the winter coho and chinook juvenile curves to January, February, March, November, and December for completeness because we knew that that would be discussed in this hearing.

I believe that's all the changes.

Q. Was a copy of this draft or the Exhibit R-27 ever provided to the applicant's consultant?

A. I don't know.

Q. Were the agencies' concerns over some of these life stages ever discussed or written to the applicant's consultant?

A. Could you ask the question again?

Q. Were the agencies' concerns over these various life [75] stages that you have listed on this revised draft communicated to the applicant's consultant?

A. We have had many conversations about the Elkhorn project between 1985 and 1987, and I believe we discussed the issue quite often.

Q. Do you have any data or anything to support your statement that summer curves better describe winter behavior on juvenile coho in the bypass reach?

A. Your question is do I have any data?

Q. Yes, or anything to support your statement and conclusion that summer curves better describe winter behavior of juvenile coho in the bypass reach.

A. No, that's a professional judgment call based on reading the literature and my own feelings about how the computer model works.

MS. BENDOR: Excuse me. Volume, please.

THE WITNESS: Excuse me.

That's a professional judgment call based on reading the literature and my own conclusions about how the computer model works.

Q. (By Mr. Bubenik) Does the potential habitat data for summer coho juveniles peak at a higher low than the data on winter coho juveniles?

MS. BENDOR: Sir, if it's - well, I am having a hard time getting the questions, and if there is a [76] chart you are referring to or a table that is fine, but I am having a hard time tracking the question.

A. (Pause) There's an - I think there's an exhibit in the record that has this stuff graphed out, and it would be nice if I could use it.

Q. (By Mr. Bubenik) What is that? Is that A-11?

A. It's not marked. It's A-11. This may help.

Q. I believe my question related to do the juvenile summer curves reflect a higher flow requirement than the juvenile winter preference curves for coho?

A. It looks like it, yes.

MR. BUBENIK: I have no further questions.

MR. HARRISON: All right. Thank you, Mr. Bubenik.

At this point we will recess for lunch and reconvene at 1:15, please.

(Recess.)

MR. HARRISON: We will be in order, please.

Mr. Bubenik, have you finished your cross-examination?

MR. BUBENIK: Yes, I have.

MR. HARRISON: All right. Are there any questions of the Board of Ms. Caldwell?

MR. FAULK: No questions on my part.

MR. HARRISON: Ms. Bendor?

[77] EXAMINATION

BY MS. BENDOR:

Q. Yes, Ms. Caldwell. I missed one of Mr. Bubenik's questions on cross-examination just towards the end, and your answer was something about it was the result of my professional judgment rather than data. Do you recall what you were answering in response to? If not I can -

A. I think it was why we made the recommendations to move off of the winter coho curves, and I think it was - I think the question was did I have data to back that up.

Q. For which months?

A. He used them in general was the way I understood the question.

Q. Okay. So the question was to use instead of the spring coho -

A. To use the summer curves.

Q. Use summer curves?

A. Right. That's my best recollection.

Q. Okay. I am sure that on recross it will be clarified if that is not the case.

I believe it was your testimony on cross-examination that you had first seen the agency's recommended flow levels and then later on you had seen a hydrographic chart I suppose with the agency flows shown on it or that you superimposed -

[78] A. I superimposed them, yeah.

Q. (Continuing) and that you were surprised by how low the agency flows were?

A. That's correct.

Q. Did you have any resulting thoughts about those low flows? That is, did you have any concerns or anything that flowed from that which -

A. Yes. It indicated to me that perhaps we were not recommending the best flow in there, and because if the - that perhaps the flows recommended were too low.

Q. Too low for what, preservation?

A. Preservation and habitat.

Q. Or enhancement?

A. Preservation.

Q. Did you in any way discuss those thoughts?

A. The agency and tribal biologists discussed that, and I do know that when we were evaluating Tacoma's counter-proposal that that was also a reason that strengthened our desire to stay with the agency for recommending flows, and we didn't want to get any lower. We were already concerned it might be too low.

Q. Did you ever communicate those concerns to the applicant that perhaps the agency flows were too low?

A. I didn't, no.

Q. Do you know if anybody in the agencies communicated that?

[79] A. I don't know. I do remember comments like look, we are giving you so much lower. Why should we go any lower than the minimum flows? I believe there were comments like that.

Q. Do you have any opinion as to where they might be too low, which months? If you don't have any opinion that is also an answer.

A. I don't have an opinion specifically by month. It's more the fact that a lot of the time our minimum flow is below the 90 percent exceedence, below or at the 90 percent exceedence.

Q. Do you have any opinion where it might otherwise be preserved or enhanced? If you don't have an opinion at this point that is also okay.

A. I have no way of knowing that.

Q. I believe it was your testimony in cross-examination - I want to make sure I understand it - that the minimum flows set by the department are not necessarily the flows that will be in the stream. Is that true?

A. That is correct.

Q. And is that because during peak flows the intake pipe capacity for the proposed project can't handle all the volume and therefore there might be amounts going downstream in excess of the pipe capacity plus the minimum flows?

[80] A. That's correct, and also because a lot of - some of these projects use more than one turbine, and they don't necessarily have to have them all on at the same, you know -

Q. Is the maximum amount that the project can take out limited by the pipe capacity, or is there some other factor that we should be aware of?

A. I don't know if it's limited by the pipe capacity or the turbines, but it's my understanding that it's either one or the other.

Q. Whichever is less?

A. Right.

Q. Whichever can accommodate less?

A. Right, right.

Q. Do you know what the pipe capacity is?

A. No.

Q. Do you know what the turbine capacity is?

A. In what is Exhibit A-21, my notes on the copy that I got at the meeting in January, '86 say machine flow 50 to 600 CFS, and so I assumed that that was the turbine capacity.

Q. 50 to 600?

A. Mm-hmm.

Q. Do you know if it was one or two turbines or how many turbines?

A. I don't know.

[81] Q. Is there any document that we have before us now as an exhibit which would indicate what the estimate of the actual flows would be given the realities of the system capacity to withdraw or utilize?

A. I don't understand.

Q. I am trying to understand what the real flows will be in the stream understanding that the agency flows are minimum but are not necessarily actual.

A. Oh, okay. Let's see. Can I try to - can I try to explain?

Q. Sure.

A. If the minimum flow is 200 and their minimum machine flow is 50, the stream is flowing 200 or less, it will be flowing 200. Between 200 and 249 it will be flowing between 200 and 249. At 250 it will go back to 200 as they take the flow between 250, and if the top machine flows 600, then it would be -

Q. I understand that.

I felt the question of if there were more than minimum flow really comes in when you are talking about high flows.

A. That and how they choose to run the power project.

Q. Okay. Is there any way for me to understand from the documents presented what the actual flows are likely to be if the project is operationed?

[82] A. I could draw the hydrograph that I usually draw when I'm usually trying to explain to a manager what the -

Q. And that includes the capacity?

A. Yeah. I could try and draw that for you.

Q. If you believe it would be accurate.

A. I believe it would be a good example.

Q. Well -

A. I am trying to do this - I know you want answers quickly, but what -

Q. I am as concerned about the accuracy as the quickness.

MR. HARRISON: All right. We will have a brief recess at this point. I would like to speak with counsel, please.

Go ahead, Ms. Caldwell.

(Recess.)

MR. HARRISON: All right. We will be in order, please.

Now we are ready to resume your testimony, Ms. Caldwell.

Ms. Bendor?

Q. (By Ms. Bendor) Yes, Ms. Caldwell, what I am trying to find out is what is the actual flow going to be in the stream. I understand that there are minimum flows set, but that does not tell us what actually would be occurring if the project were in place.

[83] A. Mm-hmm. What I've drawn here is a real simplistic one-year daily flow hydrograph - I believe there are a couple of them in evidence already - and that is what the purple line is. So you can see that there would be rain storms and rain events, and this is to indicate that in the summer flow goes very low.

Q. Is the purple line a peak on a particular day, or is it a median for the day, or -

A. It would be the daily flow, the peak on a particular day in this example, just for an example.

Q. So that is CFS?

A. CFS, cubic feet per second. So there's both storm events, high-flow events, and low-flow events on here. The black line is meant to indicate a theoretical minimum flow that's been set for this stream for the theoretical hydro project.

Q. That would be the agency's recommended flow?

A. That would be the agency's recommended flow. Because of the range of flow events in a normal river, if you were to put this on a real hydrograph the minimum flow would be very low. It would be like down here, to scale (indicating). It's not to scale because I wanted to make a couple points with it. It's a little higher than the minimum flow would appear usually.

Q. Are you drawing it straight, or logarithmically in your [84] illustration?

A. Straight in this illustration.

Q. Okay.

A. The kind of salmon color is a theoretical hydro project with some simplifying assumptions that it has got one turbine that's either on or off. It never breaks down. It never goes off line. It's whenever there's water in the river it will be operating. And I just did that to show you, okay?

And because this one turbine has so much capacity it only takes flow between here and here (indicating). So the banner flow is the amount of water that would be removed from the bypass reach during entire project operation.

The couple points to make are that the storm events will still be in the river. On this day - say if you were to take this particular day - the flow in the river would be the sum of the minimum flow and the flow from the storm events put together. If you were to take this particular day, the flow in the river would be lower than the minimum flow, and the power project would not be operating. That's why these break and start again.

So the flow on a particular day is simply this flow with this taken out of it (indicating).

Q. Okay. Now, my follow-up question then is does that [85] additional sum above the salmon-colored drawing -

A. Right.

Q. (Continuing) provide any additional measure of protection or otherwise perhaps negative for the species that you had intended to maximize at particular life stages?

A. Does it -

Q. If you have an opinion on that.

A. It might or it might not. It just depends on the species requirements. I can't know that.

Q. Okay. Thank you.

Now, I have one or two more questions.

Regarding Exhibit R-27 what was the date that that was finalized, if you know?

A. The date it was typed, or the date the information was finalized in an agency sense?

Q. Well, I guess let me ask another question.

I am trying to understand - you had said something that there was a difference between the draft version that was attached to the deposition and the final version, and at one point you said something about you added winter chinook for January through March, November, December, for completeness -

A. Mm-hmm.

Q. (Continuing) because you knew it would be discussed at the hearing.

[86] A. Right.

Q. So am I to assume that R-27 was prepared after the appeal was filed?

A. Right, the additions on R-27 were done after the appeal was filed. This document I believe I generated in typed form. This is the draft that we referred to. I believe the date that this was - the date on it is January, 1987, and I don't know if that was before or after the appeal was

filed. I did this when I was still working for the Department of Fisheries.

Q. So the document that was actually relied upon for the agency decision would have been the draft R-27?

A. It would have been the draft R-27 and whatever notes and work sheets people had developed over the months we discussed this. This was an attempt to get in nice, final typed form for the record what we had been using.

Q. Okay. And one last question.

I missed something during your direct examination. You said there were four assumptions made prior to doing the final result, and you said, number one, if you optimize for steelhead, and I lost that.

A. We decided to make an assumption that if we took care of the predicted habitat requirements for steelhead that we would take care of whatever resident rainbow trout would be present.

[87] Q. Okay.

A. In other words, the other species that Department of Game mentioned.

MS. BENDOR: Thank you. I have no further questions.

MR. HARRISON: Mr. Manning, anything else?

FURTHER EXAMINATION

BY MR. MANNING:

Q. Ms. Caldwell, you expressed some concern in your testimony that the flow regime required by the agencies may not be enough, and I would just like to ask your opinion on sort of the ultimate question in this case, and that is, in your opinion, are the agency flows appropriate to protect the fish resource in the bypass reach?

A. Yes.

Q. Do you know if it's adequate?

A. No.

Q. Okay. And there were also some questions regarding the use of so-called winter preference curves for coho and chinook, juveniles.

A. (Witness nods affirmatively.)

Q. To your knowledge, do any of the agencies that were involved in this case accept winter preference curves for coho and chinook juvenile at this time?

[88] A. To my knowledge the agency recommendation is that those curves not be used.

MR. MANNING: Okay. That is all I have.

MR. HARRISON: Mr. Frymire?

MR. FRYMIRE: I have no questions.

MR. HARRISON: Mr. Bubenik?

FURTHER EXAMINATION

BY MR. BUBENIK:

Q. Ms. Caldwell, when did the agencies chart their flow with relationship to the hydrograph, which I believe is shown on your exhibit there by the door?

MR. BUBENIK: What is the number of that exhibit, Jay?

MR. MANNING: R-4.

A. To the best of my recollection it was after the meeting at the Tacoma Control Center on January 14th, 1986.

Q. (By Mr. Bubenik) Do your notes reflect when that exhibit was made or something similar to that particular exhibit?

A. Could you ask the question again?

Q. Do your notes reflect when that particular Exhibit R-4 was created or something similar to that particular exhibit?

A. No, I don't have a date on it. That's not -

Q. Do you recall when that particular diagram was discussed? What was the exact date of the meeting you mentioned?

[89] A. I'm sorry. Do -

Q. When was the date of the meeting when that similar exhibit or diagram was discussed with the agency?

A. I don't have that. I just - I don't have that information. To the best of my knowledge it was after January, 1986 when we were considering Tacoma's counter-proposal.

Q. But the agency proposal was made in what, November or October of 1985?

A. That's correct.

* * *

* * *

[96] Q. Ms. Rybak, did your agency review the proposed flows by the city of Tacoma?

A. Yes, we did.

Q. Did your agency as an agency reach any result or conclusion on that?

A. Yes, we did. We - the conclusion that we reached was that the flows would not be adequate to maintain the fish [97] and the habitat present in that bypass reach.

MS. BENDOR: Thank you.

* * *

* * *

[109] Q. What was your personal opinion then as to what flow regime should be required with regard to the Elkhorn [110] project?

A. Well, if the cooperation of the Elkhorn hydro project is given, then I felt comfortable with the agency flow recommendations.

Q. What was the treaty council's intent in agreeing to the agency flow regime?

A. To provide - our intent was to reduce the level of risk to treaty council resources to the maximum extent possible, that is, to provide a flow that we would feel would under most conditions provide the kinds of habitats necessary for the perpetuation of spring chinook, steelhead, and coho in the bypass reach.

* * *

BEFORE THE POLLUTION CONTROL
HEARINGS BOARD
STATE OF WASHINGTON

PUD NO. 1 OF JEFFERSON)	
COUNTY and CITY OF)	
TACOMA, DEPARTMENT OF)	
PUBLIC UTILITIES,)	
Appellants,)	
vs.	)	PCHB NO. 86-118
DEPARTMENT OF)	
ECOLOGY, DEPARTMENT)	
OF WILDLIFE, and)	
DEPARTMENT OF)	
FISHERIES,)	
Respondents.)	

TRANSCRIPT OF PROCEEDINGS

DAY FOUR

December 18, 1987

Lacey, Washington

KIM L. OTIS
Registered Professional Reporter
GENE BARKER & ASSOCIATES
406 Security Building
Olympia, Washington 98501
(206) 943-2693

* * *

[23] Q. Is there explanation also in the license application as to the power generated and the need for the power?

A. Well, there's a section.

MR. MANNING: I am going to object to this testimony based on hearsay. It doesn't matter whether this power is needed or not for the issues in this case.

MR. BUBENIK I think the maximum net benefits test is an issue in the case, Your Honor.

MR. MANNING: The issue in the case is whether or not as a legal issue we would be required to go [24] through the maximum net benefits test. We did not do that. The remedy if in case this board decides we have to do that is remand with instructions telling Ecology to go through the maximum net benefits test. I don't think this board is going to be able to go through the maximum net benefits test for us.

MR. HARRISON: Well, I don't intend to receive evidence on feasibility in this proceeding and, therefore, I will sustain the objection. However, there's a related concern that I think is appropriate for these proceedings and that is - and if you don't care to get into this, that's fine, I think I'll probably raise it when I have a chance. And that is we've had a lot of discussion about whether the agencies have considered Tacoma's flows and ultimately I'd like to know whether the City has considered the agency flows; in so doing, whether they made an ultimate judgment that under the agency flow their proposal is feasible or infeasible. Because if they had made a judgment that it was feasible, I think that would have a lot to do with this

hearing. So at some point I want to get to that ultimate question.

MR. MANNING: Judge Harrison, with all due respect, I don't think that issue is a part of this case. Whether or not this project is feasible under the [25] agency flow regime is clearly beyond the issues set forth that were agreed to by the parties in the prehearing order. The issues are what fish use the bypass reach and whether the agency flows are appropriate to protect fish. Whether or not Tacoma can build this project with the agency flow regime I think is way beyond those issues and it's certainly beyond what I'm prepared to respond to. None of us have dealt with that issue so far and I think that would add a whole new realm to this case that would take us months to prepare for.

MR. HARRISON: I'm not asking for something to be offered for the truth thereof; I'm simply asking for the verbal act as to whether or not Tacoma has made that determination. And if they have made a determination hypothetically that they could go ahead and build the project anyway, then I think that reflects terrifically upon the import of this case. It moots the case. Now if they say otherwise, then it leaves it to another day and another forum, but I would simply like the record to reflect whether as a historical fact they made that determination. Proceed.

Q. (By Mr. Bubenik) Could you address the question that Mr. Harrison has posed?

A. I can't. I try to avoid learning that information because it could bias my presentation or my outlook on [26] what flows I propose. If a project is unfeasible at flows slightly higher than what we've proposed, that

would tend to influence me and I'd have to work hard trying to avoid that bias of trying to strive more strongly for a flow that maybe I wouldn't have agreed to otherwise. On the other hand, I try, I don't want to know if the proponent can get by with flows a lot higher than that, because they would like to get as much energy and I like to avoid conflict, so I would be biased.

Another way of trying to say well, gee, guy, let's not go after this fight for nothing, let's just agree. I try not to get involved with that aspect of it because I don't want to be biased one way or the other no matter what the outcome was.

MR. HARRISON: Very well.

Q. (By Mr. Bubenik) So you do not know whether Tacoma could feasibly construct the project with the agencies' proposed flows?

A. I know that analysis has been done, but I have strictly told people that I work for that I don't want to know, so, sorry, Mark.

MR. BUBENIK: If the Board would like, I could provide that with another witness if that testimony is deemed to be relevant.

MR. HARRISON: Well, you've made that [27] representation in your briefs earlier, if I recall correctly.

MR. BUBENIK: I don't know whether I did or not. I can't recall if I made that representation or not. It might be in the notice of appeal.

* * *

* * *

[60] Q. Now, I want to understand the mechanics of the project just very briefly in terms of the flow that would be remaining in the stream.

Q. Suppose the month required instream flows of 140. Is it true that at 190 cfs the flow in the river would actually be 190 because the machines don't turn on until you say get to 51 cfs?

A. That is correct.

Q. But at 191 the flows in the stream would be 141 because the machines would kick on?

A. The flows in the stream would be 150, 140 because the machines would kick on.

Q. And they would take the 50 plus the one?

A. That is correct.

Q. So there's some sort of funny discontinuity where a certain point it suddenly drops down?

A. Correct.

Q. Now let me ask you, suppose you have that kind of daily fluctuation in low summer flow period? If you want to [61] put up R-3, feel free. What does that do to the possible incubation of eggs that are out there when you have a sudden flow drop during the day or between days where you have that occur? I'm talking now about a daily or variation within a month.

A. Yes. If you had that kicking on and kicking off every day, it would have an impact on fisheries, not only on incubation but perhaps other life stages. The thing is

you can't operate a project turning it on and off that often, the equipment wouldn't stand up. So they look at building the equipment and sizing it to the river so that it achieves what they call a plant factor so that it's on most of the time. That's why we say during September we probably wouldn't even be operating because we can't, you know - let's say a couple days it goes up in September, you don't want to turn it on for a couple of days. It's not worth it. There's too much wear on the equipment.

Q. Let me ask you, is there anything in the documents or exhibits presented to us that clearly specify those kind of operating limitations so that we wouldn't have the kind of kicking on and kicking off when you went right over the 50 plus the cfs flow required in the stream?

A. There's nothing in this document, no.

Q. So we don't know one way or the other as to a certainty when they kick on and when they kick off and for how long [62] and how much of a drop?

A. You don't know that, no, that is correct, and there is no way of you knowing that from this document.

Q. Or from any other exhibits presented to us?

A. So far, no. It hasn't really been an issue and the FERC people generally understand enough about it and we can present that easily enough, it's easy to put it together and we can do it on a daily flow regime.

* * *

[72] MR. HARRISON: I have one final point to raise. Mr. Bubenik, I will address my question to you as counsel for the Appellant. What I am speaking to is not any piece of evidence, but in reference to your notice of appeal, and I ask you whether you have a copy of that notice of appeal?

MR. BUBENIK: Yes.

MR. HARRISON: Now, on page 3 of your notice of appeal you have set forth as one of the grounds for appeal at paragraph 4, subparagraph D, as follows: [Reading] Department's decision is unjust or arbitrary and capricious and will result in substantial economic loss to the PUD and Tacoma because to satisfy the requested minimum flows will result in a total inability to proceed with this project, period, end quote.

Is that the position that the Appellants are taking in this matter?

MR. BUBENIK: Yes, it is, Your Honor.

MR. HARRISON: Now, have the Appellants conducted any actual analysis of the Department's minimum flows before entering this pleading in this matter?

MR. BUBENIK: I do not know for certain. However, it's my recollection that I was clearly advised that, yes, they had analyzed the proposed flows and based upon that found that the project would not be [73] economically feasible.

* * *

BEFORE THE POLLUTION CONTROL HEARING
BOARD
STATE OF WASHINGTON

PUD NO. 1 OF JEFFERSON	)	PCHB NO. 86-118
COUNTY AND CITY OF)	
TACOMA, DEPARTMENT OF	)	MOTION TO
PUBLIC UTILITIES,	)	SUPPLEMENT
	)	THE HEARING
Appellants,	)	RECORD TO
	)	ADD
v.	)	ECONOMIC
STATE OF WASHINGTON,	)	FEASIBILITY
DEPARTMENT OF ECOLOGY,	)	INFORMATION
DEPARTMENT OF FISHERIES and)	
DEPARTMENT OF WILDLIFE)	
)	
Respondent)	

COMES NOW the Appellant City of Tacoma and respectfully requests that the attached Affidavit Pertaining to Project Feasibility be included in the hearing record for this matter. This information was suggested to be provided, presumably, so that the Board could fully evaluate the maximum net benefits analysis and argument.

DATED this 4th day of February, 1988.

ROBERT J. BACKSTEIN
WILLIAM J. BARKER
MARK L. BUBENIK
G. S. KARAVITIS

By /s/ Mark Bubenik
Mark L. Bubenik
Of Attorneys for Appellant,
City of Tacoma

v.

Respondent

Garth Jackson, being first duly sworn on oath,
deposes and says:

1. That I am a professional electrical engineer licensed by the State of Washington and employed by the City of Tacoma, Department of Public Utilities, Light Division.

2. That I have reviewed the economic feasibility information provided by our consulting engineers, Hosey & Associates, pertaining to the proposed Elkhorn project.

<u>COST (mills/Kwh)</u>	<u>Applicants'</u> <u>Compromise Flows</u>	<u>Agencies</u> <u>Flows</u>
Average flow	47	56
Firm	100	199
Secondary	15	15

4. Normally, when evaluating project economic feasibility the firm power cost is a primary concern. Instream flows required by the Agencies are withdrawn from the reliable or firm power generation leaving only the less reliable secondary power. Therefore, since the Applicants' firm power cost is already at the economic threshold of 100 mills/Kwh, the proposed project would not be economically feasible at the Agencies' proposed flows.

Further sayeth the affiant naught,

/s/ Garth Jackson
Garth Jackson

Subscribed and sworn to before me this 4th day of February, 1988.

/s/ Mark Bubenik
Notary Public in and for the State
of Washington, residing at Gig Har-
bor

BEFORE THE POLLUTION
CONTROL HEARINGS BOARD
STATE OF WASHINGTON

PUD NO. 1 OF JEFFERSON	)	PCHB NO. 86-118
COUNTY AND CITY OF	)	MEMORANDUM
TACOMA, DEPARTMENT OF	)	IN OPPOSITION
PUBLIC UTILITIES,	)	TO MOTION TO
Appellants,	)	SUPPLEMENT
v.	)	THE HEARING
STATE OF WASHINGTON,	)	RECORD
DEPARTMENT OF ECOLOGY,)	
DEPARTMENT OF FISHERIES and)	
DEPARTMENT OF WILDLIFE)	
Respondent)	
)	
)	

The Department of Ecology has received the City of Tacoma's "Motion to Supplement The Hearing Record To Add Economic Feasibility Information." Ecology opposes adding this information to the record in this matter.

Ecology recognizes that the information was provided at the request of the Board. However, the information should not and cannot be made a part of the record.

The information in question consists of an affidavit of Mr. Garth Jackson. Mr. Jackson did not testify at the hearing in this matter and therefore was not subject to cross-examination. Moreover, the prehearing order in this case was explicit as to the issues before the Board. Those issues were, to paraphrase, whether Ecology's flow regime is appropriate for protecting fish, and what fish

utilize the bypass reach. The project's economic feasibility is of no relevance to either one of these issues.

Finally, the information in question is not necessary to resolve Tacoma's contention that the maximum net benefits test must be utilized in this case. That question is a purely legal one, and whether or not the project is feasible with Ecology's flow regime has no bearing whatsoever on the resolution of that issue.

For all of these reasons, Ecology urges that Tacoma's motion to supplement the hearing record be denied.

DATED this 10 day of February, 1988.

KENNETH O. EIKENBERRY
Attorney General

/s/ Jay J. Manning
JAY J. MANNING
Assistant Attorney General
Ecology Division- M/S PV-11
Olympia, WA 98504
(206) 459-6158

CERTIFICATE OF SERVICE

I, BECKY WALDRON, certify that on the 11th day of February, 1988, I mailed a true and correct copy of a Ecology's Memorandum in Opposition to Motion to Supplement the Hearing Record to the following persons at the following addresses:

Mark L. Bubenik
Assistant City Attorney
P.O. Box 11007
Tacoma, WA 98411

William C. Frymire
 Assistnat Attorney General
 M/S PB-73
 Olympia, WA 98504-8071

/s/ Becky Waldron
 Becky Waldron

BEFORE THE POLLUTION CONTROL HEARINGS
 BOARD
 STATE OF WASHINGTON

PUD NO. 1 OF JEFFERSON	)	PCHB No. 86-118
COUNTY, AND CITY OF)	
TACOMA, DEPARTMENT OF	)	ORDER
PUBLIC UTILITIES,	)	DENYING
	)	MOTION TO
Appellants,	)	SUPPLEMENT
	)	HEARING
v.	)	RECORD
STATE OF WASHINGTON)	
DEPARTMENT OF ECOLOGY)	
)	
Respondents,)	
)	
and)	
STATE OF WASHINGTON)	
DEPARTMENT OF WILDLIFE)	
DEPARTMENT OF FISHERIES)	
)	
Intervenors.)	
)	
)	

On February 4, 1988, appellant, City of Tacoma, filed its Motion to Supplement the Hearing Record to Add Economic Feasibility Information.

On February 12, 1988, respondent Washington State Department of Ecology filed its Memorandum in Opposition.

Economic feasibility information is not relevant to the subject of base flows which this matter presents. Economic feasibility information may have been germane to settlement discussions among the parties, and reference to the same was suggested solely for that purpose.

Wherefore, the motion is denied.

DONE at Lacey, Washington this 29th day of June,
1988.

POLLUTION CONTROL
HEARINGS BOARD

/s/ William A. Harrison
WILLIAM A. HARRISON
Administrative Appeals Judge

IN THE SUPERIOR COURT OF
THE STATE OF WASHINGTON
IN AND FOR THE COUNTY OF THURSTON

PUD NO. 1 of Jefferson)	
County, and City of)	
Tacoma Department of	)	Cause No.
Public Utilities,	)	89-2-00413-2
Appellants,)	
	)	CERTIFICATE
v.)	
STATE OF WASHINGTON,)	
DEPARTMENT OF ECOLOGY,)	
Respondent.)	

THIS IS TO CERTIFY that the material transmitted herewith are originals or true and exact copies of original documents and exhibits compiled by the Pollution Control Hearings Board relating to the hearing conducted on the above-referenced matter (PCHB No. 86-118) and that the written material transmitted herewith constitutes the entire record considered by the Board in reaching its decision in this matter.

DATED this 17th day of March, 1989.

/s/ Robyn Bryant
Robyn Bryant, Clerk of the
POLLUTION CONTROL
HEARINGS BOARD

PCHB No. 86-118
PUD NO. 1 of Jefferson County & City of Tacoma v.
Department of Ecology, Department of Fisheries &
Department of Wildlife Thurston County Cause No.
 89-2-00413-2

DOCUMENTS

Notice of Appeal	Received July 11, 1986
Request for Formal Hearing & Certificate of Mailing	Received July 22, 1986
Motion to Compel Answers to Interrogatories and Affidavit in Support of Motion to Compel Answers to Interrogatories	Received November 20, 1986
Order Compelling Answers to Interrogatories and Certification of Mailing	Dated December 1, 1986
Order Continuing Hearing and Setting Date for Motion Reply	Dated January 8, 1986
City of Tacoma's Motion for Summary Judgment, Memorandum in Support of Motion for Summary Judgment, including affidavits of Philip Hilgert and Eugene Welch	Received December 12, 1986
Statement of Additional Authorities	Dated January 22, 1987

Cross Motion for Summary Judgment, Memorandum in Opposition to the City of Tacoma's Motion for Summary Judgment and in Support of Ecology's Cross Motion for Summary Judgment, Affidavit of Brad Caldwell, Affidavit of Walter Bergstrom, Affidavit of Kenneth J. Bruya, Affidavit of Hal Beecher, and Certificate of Mailing	Dated January 28, 1987
Memorandum in Reply to DOE's Memorandum in Opposition to City of Tacoma and Affidavit of Phil Hilgert	Dated February 4, 1987
Order Granting Cross Motion for Summary Judgment	Dated April 10, 1987
Motion for Reconsideration	Received April 17, 1987
Order Retaining and Modifying Summary	Dated May 26, 1987
Pre-Hearing Order	Dated June 29, 1987
City of Tacoma's Second Motion for Summary Judgment	Received November 3, 1987
City's Supplemental Memorandum in Support of Motion for Summary Judgment	Received November 10, 1987
City of Tacoma's List of Witnesses and Exhibits	Received November 12, 1987

Motion to Compel Answers to Interrogatories and Compliance with Pretrial Order and Affidavit in Support of Motion to Compel	Received November 12, 1987
Department of Ecology's Second Cross Motion for Summary Judgment	Received November 13, 1987
Motion to Compel Answers to Interrogatories or in Lieu Thereof Sanctions and Second Set of Interrogatories Submitted to the Department of Ecology for Response and Request for Production of Documents	Received November 18, 1987
Order Denying and Granting Motion to Compel Answers to Interrogatories	Dated November 30, 1987
Motion to Intervene	Received December 1, 1987
Order Granting Intervention	Dated December 2, 1987
Motion for Reconsideration of Order Granting Intervention	Received December 7, 1987
Second Order Granting Intervention	Dated December 7, 1987
Hearing Memorandum	Received December 8, 1987
Department of Ecology's Trial Brief	Received December 8, 1987
Order Denying Second Motion for Summary Judgment	Dated December 9, 1987

Motion to Strike and Motion in Limine	Received December 10, 1987
Hearing Memorandum (Revised)	Received December 14, 1987
Order Denying Motion to Strike and Motion in Limine	Dated December 15, 1987
Final Trial Memorandum	Received February 4, 1988
Motion to Supplement the Hearing Record to Economic Feasibility Information	Received February 4, 1988
Closing Argument	Received February 4, 1988
Memorandum in Opposition to Motion to Supplement the Hearing Record	Received February 21, 1988
Order Denying Motion to Supplement the Hearing Record	Dated June 29, 1988
Final Findings of Fact, Conclusions of Law and Order and statement by member Judith A. Bendor	Dated June 29, 1988
Dissenting Opinion of Judith A. Bendor	Dated July 15, 1988
Petition for Reconsideration, Memorandum in Support of Petition for Reconsideration, and Affidavit of Kenneth O. Slattery	Dated July 7, 1988
Appellant City of Tacoma's Memorandum in Opposition to Petition for Reconsideration	Received July 13, 1988

Revised Final Findings of Fact,
Conclusions of Law and Order
and Dissenting Opinion

Dated January 25, 1989

Petition for Review of the
Decision of the Pollution
Control Hearings Board in
PCHB No. 86-118 and
Affidavit of Service

Received February 24,
1989

Cross Petition for Review of
Pollution Control Hearings
Board Decision No. 86-118
dated January 25, 1989 and
Affidavit of Service

Received March 1, 1989

Original Transcript of Proceedings,

Day One

Dated December 15,
1987

Day Two

Dated December 16,
1987

Day Three

Dated December 17,
1987

Day Four

Dated December 18,
1987

CORRESPONDENCE

Letter to Board from Mr.
Bubenik

Dated July 10, 1986

Letter to Parties from Mr.
Faulk

Dated July 11, 1986

Letter to Board from Jay J.
Manning

Dated July 16, 1986

Letter to Mr. Manning from
Mr. Bubenik

Dated October 29, 1986

Letter to Board from Mr.
Manning

Dated October 27, 1986

Letter to Parties from Mr.
Faulk

Dated October 31, 1986

Letter to Board from Mr.
Bubenik

Received November 20,
1986

Letter to Mr. Manning from
Mr. Bubenik

Dated December 3, 1986

Letter to Board from Mr.
Bubenik

Dated December 11,
1986

Letter to Board from Mr.
Manning

Dated December 30,
1986

Letter to Parties from Mr.
Harrison

Dated January 8, 1987

Letter to Board from Mr.
Manning

Dated January 16, 1987

Letter to Board from Mr.
Bubenik

Dated January 22, 1987

Letter to Parties from Mr.
Faulk

Dated January 26, 1987

Letter to Board from Mr.
Manning

Dated January 28, 1987

Letter to Board from Mr.
Manning

Dated January 29, 1987

Letter to Board from
Mr. Bubenik

Dated January 30, 1987

Letter to Board from Mr.
Bubenik

Dated February 4, 1987

Letter to Parties from Mr.
Harrison

Dated April 10, 1987

Letter to Board from Mr.
Bubenik

Dated April 16, 1987

Letter to Parties from Mr. Harrison	Dated April 17, 1987
Letter to Parties from Mr. Harrison	Dated May 26, 1987
Letter to Parties from Mr. Harrison	Dated June 3, 1987
Letter to Parties from Mr. Harrison	Dated June 29, 1987
Letter to Board from Mr. Bubenik	Dated November 1, 1987
Letter to Parties from Mr. Harrison	Dated November 6, 1987
Letter to Board from Mr. Bubenik	Dated November 9, 1987
Letter to Board from Mr. Bubenik	Dated November 10, 1987
Letter to Board from Mr. Manning	Dated November 13, 1987
Letter to Board from Mr. Bubenik	Dated November 18, 1987
Letter to Board from Mr. Bubenik	Dated November 18, 1987
Letter to Board from Mr. Frymire	Dated November 30, 1987
Letter to Parties from Mr. Harrison	Dated November 30, 1987
Letter to Parties from Mr. Harrison	Dated December 2, 1987
Letter to Board from Mr. Bubenik	Dated December 4, 1987

Letter to Parties from Mr. Harrison	Dated December 7, 1987
Letter to Board from Mr. Manning	Dated December 8, 1987
Letter to Board from Mr. Bubenik	Dated December 8, 1987
Letter to Parties from Mr. Harrison	Dated December 9, 1987
Letter to Board from Mr. Bubenik	Dated December 9, 1987
Letter to Board from Mr. Bubenik	Dated December 11, 1987
Letter to Board from Mr. Manning together with Draft of Washington State Fisheries Hydroelectric Project Assessment Guidelines	Dated December 23, 1987
Letter to Board from from Mr. Bubenik togetherwith copy of settlement agreement in <i>Northwest Steelehead, et al. v. City of Tacoma and DOE</i>	Dated December 23, 1987
Letter to Board from Mr. Bubenik	Dated January 15, 1988
Letter to Board from Mr. Manning	Dated February 4, 1988
Letter to Board from Mr. Manning	Dated February 10, 1988
Letter to Parties from Mr. Harrison	Dated June 29, 1988
Letter to Board from Mr. Manning	Dated July 7, 1988

Letter to Parties from Mr. Harrison	Dated July 7, 1988
Letter to Board from Mr. Bubenik	Dated July 12, 1988
Letter to Parties from Mr. Harrison	Dated July 18, 1988
Letter to Parties from Mr. Harrison	Dated July 28, 1988
Letter to Parties from Mr. Harrison	Dated January 25, 1989

* * *

Certificate of Dan R. Quaintance,
Court Reporter

Deposition of Hal Beecher	Dated December 2, 1987
Deposition of Kenneth Joseph Bruya	Dated December 7, 1987
Deposition of Brad Caldwell, Volume One, Volume Two, and Volume Three	Dated December 7, 1987

No. 58272-6

SUPREME COURT
OF THE STATE OF WASHINGTON

P.U.D. #1 OF JEFFERSON COUNTY
and CITY OF TACOMA,

Appellants,

v.

DEPARTMENTS OF ECOLOGY, FISHERIES, and
WILDLIFE Departments of the State of Washington,

Respondents.

ANSWER OF RESPONDENTS
TO STATEMENT OF GROUNDS FOR DIRECT REVIEW
BY THE SUPREME COURT

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State of Washington
Departments of Ecology,
Fisheries and Wildlife

IN THE SUPREME COURT OF THE
STATE OF WASHINGTON

P.U.D. #1 OF JEFFERSON	)	No. 58272-6
COUNTY and CITY OF)	
TACOMA,)	
Appellants,)	
v.)	
DEPARTMENTS OF	)	ANSWER OF
ECOLOGY, FISHERIES,	)	RESPONDENTS TO
and WILDLIFE,	)	STATEMENT OF
Departments of the State	)	FOUNDATIONS FOR DIRECT
of Washington,	)	REVIEW BY THE
Respondents.	)	SUPREME COURT
)	
)	

INTRODUCTION

The Respondents herein (referred to as the Agencies) hereby answer the Appellants' previously filed Statement of Grounds for Direct Review by the Supreme Court. While the Agencies disagree with much of what is stated in the Appellants' Statement, it is agreed that direct review by the Supreme Court is appropriate in this case.

Under Rule of Appellate Procedure 4.2(a)(4) one of the types of cases appropriate for direct review is one which involves "a fundamental and urgent issue of broad public import which requires prompt and ultimate determination." The Agencies believe that the issues presented in this case fall directly into this category, and therefore urge the court to grant direct review.

This case involves the Appellants' proposal to construct and operate a hydroelectric project on the Dosewallips River which will remove most of the water from the affected portion of the river for most of the year. The issue here is how much water is to be left in the river. With this background, there are two primary reasons that direct review is appropriate here.

The first is that the outcome of this case will, in all likelihood, determine whether chinook and coho salmon and steelhead trout will be able to continue to use the affected portion of the Dosewallips River. Obviously, this is a fundamental and urgent issue of broad public import. Second, the outcome of this case will determine whether the Department of Ecology will continue to have the ability to ensure that hydroelectric projects do not violate state water quality laws, or whether, on the other hand, Ecology will be relegated to an advisory role only; with the Federal Energy Regulatory Commission making *all* final decisions regarding hydroelectric development in the state.

NATURE OF THE CASE

As stated in Appellants' Statement of Grounds for Direct Review, the Appellants, in response to a requirement by the Federal Energy Regulatory Commission (FERC) applied for a water quality certificate from the Department of Ecology (Ecology). A water quality certification is required under § 401 of the federal Clean Water Act, 33 U.S.C. § 1341, for any applicant for a federal license where the project requiring the federal license will result in a discharge to waters of the state.

A water quality certificate, which is issued by the state, is essentially a written determination that the discharge at issue will not violate state water quality standards. If the discharge will violate water quality standards, the certification should be denied. In addition, a state may impose conditions in a certification to ensure compliance with state water quality standards and with "any other appropriate requirement of state law." 33 U.S.C. § 1341(d).

In this case Ecology determined, after consultation with state, federal and tribal natural resource agencies, that the certification could only be issued with a condition designed to protect a fundamental component of the water quality of the Dosewallips River. That central component is the viability of the river as habitat for salmon and steelhead trout.

The condition imposed by Ecology in the water quality certification consisted of a minimum instream flow. In essence, Ecology determined the minimum amount of water necessary to ensure the stream's continued viability as both spawning and rearing habitat for salmon and steelhead trout. This minimum instream flow was arrived at only after a consortium of experts from the state Departments of Ecology, Fisheries and Wildlife, the U.S. Fish and Wildlife Service, and the Point-No-Point Treaty Council, conducted extensive data analysis and engaged in lengthy discussions amongst themselves and with the Appellants.

The Appellants appealed the water quality certification to the Pollution Control Hearings Board, a quasi-judicial administrative board created under ch. 42.21B

RCW. The Pollution Control Hearings Board (the Board) ruled that Ecology has the requisite legal authority to impose the minimum instream flow condition in the certification. The Board ruled first, that there is no preemption in this case, and second, that the minimum instream flow condition is within the scope of § 401 of the Clean Water Act. This ruling was made on cross-motions for summary judgment.

Later, after a four-day hearing, the Board went on to rule that the specific minimum instream flow required by Ecology in this case was not a true minimum flow, but rather, was an "enhancement flow" which would actually improve the affected portion of the Dosewallips River as habitat for salmon and steelhead trout. The Board went on to conclude that Ecology lacks the legal authority to require an "enhancement" flow under RCW 90.54.020(3)(a), and on this basis invalidated the minimum flow condition in the certification.

The Appellants and the Agencies cross-appealed from the Board's ruling to Thurston County Superior Court. After extensive briefing and oral argument, the Superior Court upheld the Board's legal reasoning on preemption, finding that there is no preemption in this case. More importantly, the court found the Board's decision clearly erroneous, ruling that the Board's factual finding that the Agency minimum flow was actually an enhancement flow to be mistaken after reviewing the entire record. The court also ruled that, even assuming the agency flow regime is an enhancement flow regime, the condition is still appropriate because RCW 90.54.020(3)(a) expressly allows Ecology to utilize minimum flows to enhance rivers and streams as wildlife

habitat. The Appellants now appeal from the Superior Court's ruling.

GROUND FOR DIRECT REVIEW

The most important issue presented by this case is whether chinook and coho salmon and steelhead trout will be able to use the portion of the Dosewallips River that will be affected by the Appellants' proposed hydroelectric project. In setting the minimum instream flow at issue, the Agencies established the stream flow which they truly believe to be the minimum necessary to ensure that salmon and steelhead can continue to use the affected portion of the river. These Agency experts do not believe that salmon and steelhead will be able to continue to use the affected portion of the river if a lower flow is established. The outcome of this appeal will determine whether the Agency minimum flow proposal is upheld or whether a lower flow, or possibly no minimum instream flow at all, will take its place.

The other urgent issue raised by this case goes beyond the Appellants' proposal for a hydroelectric project on the Dosewallips River. The Appellants argue that the Agencies are preempted from imposing a minimum instream flow condition in a water quality certification by the Federal Power Act, 16 U.S.C. § 791 *et seq.* The Appellants make the remarkable argument that the Federal Power Act preempts another federal statute, the Clean Water Act, 33 U.S.C. § 1251 *et seq.* In essence, Appellants argue that Ecology is prohibited by federal law from ensuring that hydroelectric projects comply with state

water quality laws. This position would result in stripping Ecology of its authority and responsibility under a number of state statutes, including ch. 90.48 RCW and ch. 90.54 RCW, and would nullify § 401 of the Clean Water Act.

Were the Appellants to prevail in this appeal, hydroelectric development would be virtually immune from state water quality laws and the Agencies' ability to protect the state's salmon and steelhead resources would be eliminated. Neither the Board nor the Superior Court has ruled for the Appellants on this issue. It is now necessary for the Supreme Court to promptly and ultimately determine this extremely important issue.

CONCLUSION

For the reasons stated above, the Agencies respectfully request that the Supreme Court grant direct review in this case. The case falls squarely within RAP 4.2(a)(4) and therefore is appropriate for direct review. In these days of failing salmon and steelhead runs and Endangered Species Act petitions, the importance of this case can hardly be overstated.

DATED this 11 day of September, 1991.

Respectfully submitted,

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No. 58272-6
 SUPREME COURT
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PUD NO. 1 OF JEFFERSON COUNTY AND
 THE CITY OF TACOMA,

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DEPARTMENTS OF ECOLOGY, FISHERIES
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 Departments of the State of Washington,
 Respondents.

MOTION TO FILE AMICUS CURIAE BRIEF

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MOTION FOR PERMISSION TO FILE
AN AMICUS CURIAE BRIEF

Fourteen state,¹ regional² and national³ conservation groups with an interest in the protection of Northwest salmon and steelhead fisheries (collectively "conservation amici") hereby move the court for (1) leave to file a single amicus curiae brief in this appeal; and (2) leave to exceed the 20 page limit in RAP 10.4(b). The brief, lodged concurrently with this motion, is approximately 35 pages in length.

Conservation amici are groups which together have demonstrated a long-standing interest in the protection and preservation of Northwest salmon and steelhead fisheries. These groups represented herein include the some of the leading conservation groups in the State, (e.g. Washington Environmental Council), as well as in the nation (e.g. Natural Resources Defense Council, the Sierra Club and American Rivers). A description of each group and its purposes is attached to this motion as exhibit A. As is evidenced from Exhibit A, several of amici have intervened in proceedings before the Federal

¹ Washington Environmental Council, Washington Wilderness Coalition, Seattle Audubon Society, Olympic Park Associates, Olympic Rivers Council, The Mountaineers and Washington Trollers Association.

² Northwest Rivers Council and Salmon For All.

³ American Rivers, Natural Resources Defense Council, National Wildlife Federation, Sierra Club and Friends of the Earth.

Energy Regulatory Commission (FERC) relating to the very project at issue in this case.⁴

As a result of their long involvement in water quality and fisheries protection issues, conservation amici are intimately familiar with the issues presented in this appeal. Many of the national groups represented here, such as the Natural Resources Defense Council, were directly involved in lobbying for the passage of the federal Clean Water Act, the construction of which is the central issue in this case. Other state groups such as Washington Environmental Council were involved in lobbying for the passage of the state Water Resource Act, the proper construction of which is also at issue here. Finally, many groups which is also at issue here. Finally many groups seeking to participate here have been involved in efforts to protect the free-flowing rivers of the Olympic Peninsula including the Dosewallips and have intervened in proceedings before FERC relating to licensing of the Elkhorn project. These groups have direct knowledge of the Elkhorn project, the stretch of River which Tacoma proposes to divert, as well as the fisheries which depend on it.

The purpose of the brief that conservation amici seek permission to file is twofold: first, to provide the Court with additional background information concerning the precarious state of anadromous fisheries in the Pacific Northwest and the failure of federal agencies such as the Federal Energy Regulatory Commission to protect these

⁴ These groups include: Friends of the Earth, The Mountaineers, Olympic Park Associates, Seattle Audubon Society, Sierra Club, and Washington Wilderness Coalition.

resources; and second, to supplement arguments made by the respondent State agencies in support of the State's authority under the federal Clean Water Act to deny or condition State certification of federally licensed hydro-power projects for the purpose of protecting the State's threatened anadromous fisheries. Conservation amici do not address the state law issues in this case as these issues have been adequately briefed by the respondent agencies.

Additional argument on the State's authority under the federal Clean Water Act is necessary in order to supplement arguments made by the agencies in their brief. The State agencies argue primarily that the conditions they imposed in this case are authorized under Section 401(d) of the Clean Water Act. While conservation amici agree with the State's position regarding the State's authority under Section 401(d), we strongly believe that the State also has the authority, and indeed the duty, under Section 401(a)(1) of the Clean Water Act and its own water quality standards to impose the conditions it did. Additional briefing is necessary to inform the Court about the State's authority under Section 401(a)(1) to protect the existing beneficial uses of its waterways. Finally, conservation amici believe that it is necessary to supplement the factual record with important, generally available information concerning the precarious state of Northwest salmon and steelhead fisheries and the Federal Energy Regulatory Commission's dismal record of protecting these resources. Much of this information, while relevant, was not included in the State's brief.

The issues raised by Tacoma in their appeal will have great ramifications to conservation amici's continuing efforts to protect this region's and the nation's remaining

anadromous fisheries. The many groups petitioning the Court today all have an interest in these fisheries and deserve to be heard.

Dated: May 15, 1992.

ZIONTZ, CHESTNUT, VARNELL,
BERLEY & SLONIM

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John B. Arum
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Attorneys for Conservation Amici

Exhibit A

Statements of Interest of Conservation Amici

American Rivers, Inc. is a nonprofit conservation organization incorporated under the laws of the District of Columbia and having a Northwest Regional Office in Seattle, Washington. Its overall mission is to preserve and restore North American rivers and their ecosystems. The goal of its Northwest Regional Office is to reverse the decline of Northwest anadromous fish populations. One of its principal programs is the protection of rivers from unauthorized hydroelectric projects and from hydroelectric developments that fail to take account of the

needs of fish, aquatic organisms, and other natural, recreational and cultural values of North American rivers. American Rivers has approximately 20,000 members nationwide including over 1,500 members in the Pacific Northwest and approximately 600 members in Washington State.

Friends of the Earth is a national conservation organization formed for the purpose of protecting natural resources, including water resources and free-flowing rivers. The Northwest Regional Office of Friends of the Earth, located in Seattle, Washington, serves members in the states of Washington, Oregon and Idaho. Friends of the Earth is a membership organization with over 12,000 members nationwide, approximately 1,200 members in the Northwest, and approximately 900 members in Washington State. Friends of the Earth is an intervenor before the Federal Energy Regulatory Commission (FERC) in the Elkhorn Project (FERC No. 9948-000).

The Mountaineers, founded in 1906, is the oldest recreation and conservation organization in Washington State. Among its purposes are to explore and study the mountains, forests and water courses of the Northwest, and to preserve – by encouragement of protective legislation or otherwise – the natural beauty of Northwest America. The Mountaineers' first expedition was to the Olympic Peninsula in 1907. The Mountaineers has participated in activities relating to protection of Olympic National Park, and was instrumental in encouraging legislation which resulted in additions to the Park in 1976. The Mountaineers is headquartered in Seattle with four branch offices in the Puget Sound region, and more than

13,000 members. It is an intervenor before FERC in the Elkhorn Project (FERC No. 9948-000).

The National Audubon Society ("Audubon") is a nonprofit, national conservation organization with more than 550,000 members, many of whom are affiliated with one of Audubon's 516 local chapters. The mission of Audubon is to effect wise public policy for the environment, especially in major issues that bear on wildlife and wildlife habitat. Audubon plays an active role in a variety of issues that could be significantly affected by the outcome of this case, including the protection and restoration of outstanding river resources and the prudent development of the nation's hydropower resources.

The Natural Resources Defense Council, Inc. (NRDC), is a nonprofit membership organization dedicated to the protection of human health and the environment, and the sound use and preservation of natural resources. NRDC represents approximately 165,000 members and supporters nationwide, including over 4,000 members in Washington State. For over twenty years NRDC's Clean Water Project has worked to ensure proper implementation and legal interpretation of the Clean Water Act, including the rights of states to protect their waters – and members of NRDC to use those waters – against both chemical pollution and other physical impacts that destroy aquatic habitat. NRDC also is working actively in the Pacific Northwest to ensure adequate instream habitat for anadromous fisheries and other uses.

Northwest Rivers Council is a nonprofit conservation organization formed to protect the region's free-flowing rivers for native fish and wildlife habitat, recreation, and

other natural values. The Northwest Rivers Council has more than 800 members throughout the region, and approximately 600 members in Washington State.

Olympic Park Associates is a nonprofit organization incorporated under the laws of Washington State, and headquartered in Seattle, Washington. It was formed in 1948 for the specific purpose of protecting the wilderness and natural resources of the Olympic Peninsula. Olympic Park Associates is an intervenor before FERC in the Elkhorn Project (FERC No. 9948-000).

Olympic Rivers Council is a nonprofit corporation having its principal place of business in Hoodspport, Washington on the Olympic Peninsula. It is a local organization whose mission is building support for the preservation, enhancement and sound management of Olympic Peninsula rivers, including protection of those rivers against unwise hydroelectric projects.

Salmon for All is an Oregon nonprofit corporation registered in Oregon and Washington, and headquartered in Clatsop County, Oregon. Salmon for All is dedicated to maintaining an economically viable commercial salmon fishery on the Columbia River. It represents non-Indian commercial gillnet fishers and fish processors on the Columbia River. Salmon for All has approximately 900 members, including representatives from communities along the lower Columbia River.

Seattle Audubon, founded in 1916, is the oldest natural history organization in Washington State. With over 5,000 members, it ranks 6th in size among the 516 chapters of the National Audubon Society. Seattle Audubon

promotes conservation and wise stewardship of our natural resources, including native fish and wildlife and their habitats. Seattle Audubon is an intervenor before FERC in the Elkhorn Project (FERC No. 9948-000).

The Sierra Club is a nonprofit national conservation organization incorporated in the State of California and having a Northwest Regional Office in Seattle, Washington that was founded in 1963. The Sierra Club was established in 1892 to explore, enjoy, and preserve the nation's forests, waters, wildlife, and wilderness. The first chapter in the Pacific Northwest was formed in 1954. It now has three regional chapters (the Cascade, Oregon and Northern Rockies chapters) as well as 21 local groups in the region, including the Twanoh group on the Olympic Peninsula. The Sierra Club has approximately 600,000 members nationwide, 30,000 members in the region, and 18,000 members, in Washington State. The Sierra Club is an intervenor before FERC in the Elkhorn Project (FERC No. 9948-000).

The Washington Environmental Council (WEC) is a statewide nonprofit citizens group founded in 1967, with its principal place of business in Seattle, Washington. It is the largest and oldest umbrella environmental organization in Washington State, founded to represent the public interest in protection of the environment, including the natural values of Washington's free-flowing rivers. Its members use the resources of Washington rivers, including the Dosewallips River, for fishing, aesthetic enjoyment and other recreational purposes. WEC's membership consists of approximately 2,000 individuals and approximately 100 affiliated organizations representing approximately 100,000 individuals. Since passage of

the Federal Clean Water Act, WEC has been actively involved in ensuring proper implementation of the Act by the Washington State Department of Ecology.

Washington Trollers Association (WTA) is a nonprofit organization of commercial fishermen, specifically salmon trollers, registered in the State of Washington under the Articles of Incorporation since 1977. The WTA represents approximately 950 troll licenses. The WTA functions to further and protect the needs and goals of the commercial salmon troll industry in the State of Washington. This is accomplished through political lobbying on state and federal levels, litigation, and fisheries and habitat protection through enhancement projects and public processes. The WTA actively cooperates with other state groups throughout the State to further the needs of the salmon resource.

Washington Wilderness Coalition (WWC) is a nonprofit corporation organized under Washington law having its principal place of business in Seattle, Washington. WWC has among its purposes the protection and preservation of wilderness resources, including wilderness within Olympic National Park. WWC also has among its purposes the protection and restoration of fisheries resources, and the protection of river ecosystems. WWC is an umbrella organization comprised of approximately 1,000 individual members, as well as 44 Washington environmental groups representing over 20,000 members. WWC is an intervenor before FERC in the Elkhorn Project (FERC No. 9948-000).
